

# LEATH & ROSS'S HOMŒOPATHIC PHARMACIES

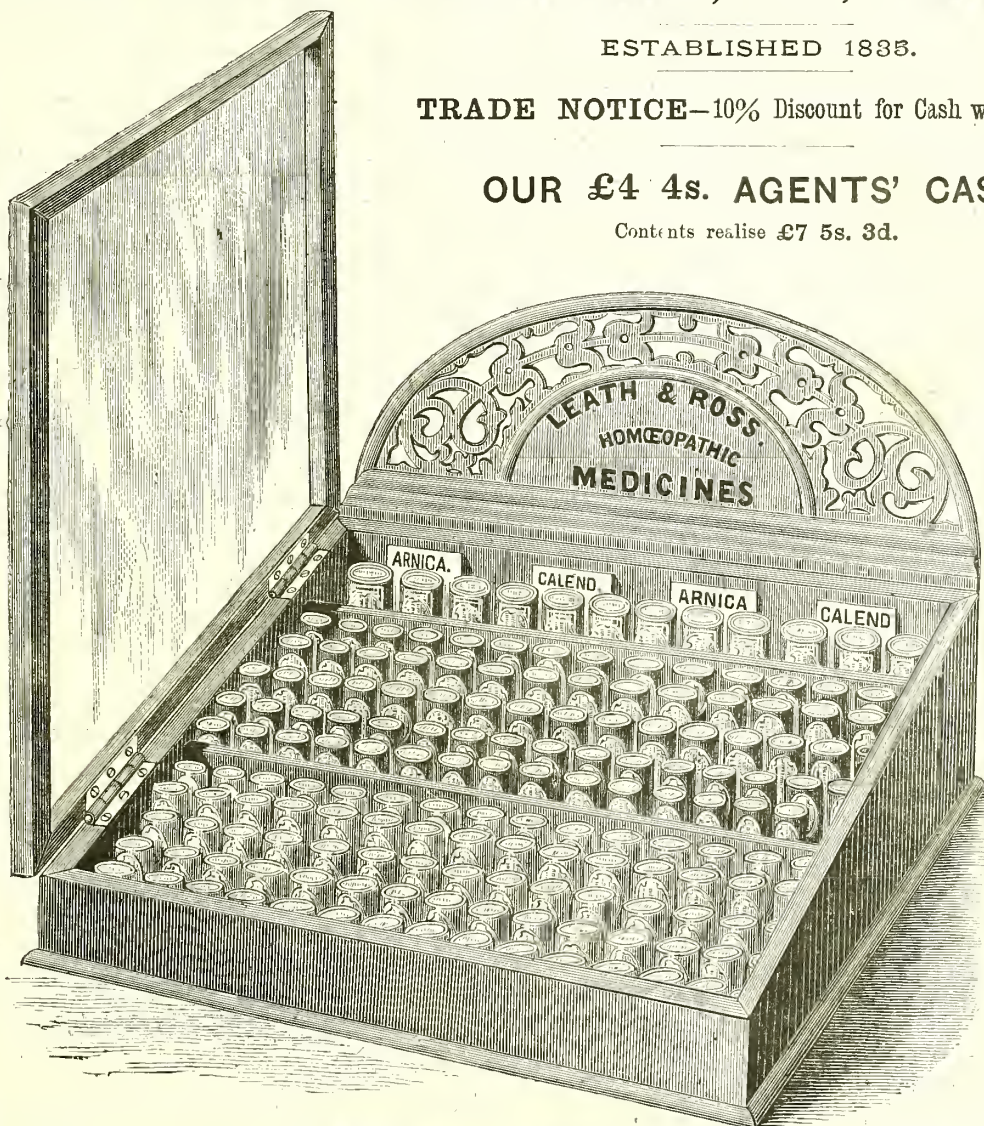
9 VERE STREET, W.,  
And 5 ST. PAUL'S CHURCHYARD, E.C., LONDON.

ESTABLISHED 1835.

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OUR £4 4s. AGENTS' CASE,

Contents realise £7 5s. 3d.



Upwards of 1,600 of these Cases have been sent out.  
DIMENSIONS.—Length, 19 inches; breadth, 16 inches; height of front, 3½ inches;  
height of back, including flap, 11 inches.

## WHOLESALE PRICE LIST OF MEDICINES PUT UP READY FOR SALE.

		TO ACCOUNT.	FOR CASH.			TO ACCOUNT.	FOR CASH.
GLOBULES.	Sixpenny Tubes ...	3/0 doz.	2/9 doz.	PILULES.	Sixpenny Bottles ...	3/0 doz.	2/9 doz.
	Ninepenny " ...	4/6 "	4/1 "		Ninepenny " ...	4/6 "	4/1 "
	Shilling " ...	6/0 "	5/5 "		Shilling " ...	6/0 "	5/5 "
TINCTURES.	Sixpenny Bottles ...	3/0 "	2/9 "	TRITURATIONS.	Sixpenny Bottles ...	4/0 "	3/7 "
	Ninepenny " ...	4/6 "	4/1 "		Ninepenny " ...	4/6 "	4/1 "
	Shilling " ...	6/0 "	5/5 "		Shilling " ...	6/0 "	5/5 "

Liberal supply of printed matter to Agents, also Showcards, Transparencies, &c.



**SEVEN HIGHEST AWARDS—Philadelphia, 1876; Paris, 1878; International Medical Exhibition, London, 1881.**

"Greatly superior to the preparations in common use."—THE LANCET.

# VASELINE SOAPS.

EMOLLIENT, ANTISEPTIC, HEALING.

Three Styles.	{	<b>VASELINE, SUPERFINE TOILET,</b>	One size, 1s. per tablet.
		<b>VASELINE, FAMILY TOILET,</b>	Two sizes, 6d. and 9d. per tablet.
		<b>VASELINE TAR,</b>	Two sizes, 6d. and 9d. per tablet.

The "VASELINE" TAR SOAP is the pleasantest and most effective combination of Tar for all Skin Diseases and Irritations, and a delightful Toilet article. The only genuine Tar Soap made.

The use of Lard, &c., as a basis for all ointments is now discarded by Medical Men, and "VASELINE" only is used for the purpose. "VASELINE," as is well known, possesses the most powerful inherent healing properties, is the best Emollient known to science, and will never become rancid: it is therefore the natural and only true basis for Soaps.

## PREPARATIONS FOR MEDICINAL AND PHARMACEUTICAL USE.

"VASELINE" (PURE).

In 1-oz., 2-oz., and 5-oz. bottles, and in  $\frac{1}{2}$ -lb., 1-lb., and 5-lb. tins.

"CAMPHORATED VASELINE."

In 2-oz. and 4-oz. bottles.

"CARBOLATED VASELINE."

Ditto, ditto, and in 1-lb. tins.

"WHITE VASELINE."

In 1-lb. and 5-lb. tins.

"VASELINE CONFECTIONS."

In fancy tin box, one size, 1s. each.

VETERINARY VASELINE.

In  $\frac{1}{2}$ -lb., 1-lb., and 5-lb. tins.

VASELINE OIL.

In bottles.

## FOR TOILET USE.

POMADE VASELINE.

In 2-oz and 5-oz. bottles. Also white in colour glass stoppered bottles.

VASELINE HAIR TONIC.

One size, price 4s. each.

VASELINE COLD CREAM.

In glass pots, 9d. and 2s.

VASELINE CAMPHOR ICE.

In fancy tin box, one size, 6d. each.

VASELINE TOILET SOAP.

(Family.) 6d. and 9d. tablets. Boxes of 6 and 3 tablets.

VASELINE TAR SOAP.

Ditto, ditto, ditto.

VASELINE TOILET SOAP.

(Superfine.) 1s. tablets, in box of 3 tablets.

## SUNDRY PREPARATIONS.

VASELINE ANTI-CORROSIVE PASTE.

One size, tin box, 6d. each.

VASELINE BOOT PASTE.

Ditto, ditto, ditto.

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In 1-lb. tins, 1s. 6d.

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In 1-lb. tins, 1s. 6d.

NOTICE.—The above only Genuine in our Packages. The BOTTLED GOODS are put up in Cardboard Cases.

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**CHESEBROUGH MANUFACTURING CO.**

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**IMPORTANT**  
TO  
**CHEMISTS AND DRUGGISTS.**



**S. MAW, SON & THOMPSON'S**  
**NEW**

**BOOK OF ILLUSTRATIONS**  
**FOR 1882,**

PRICE 10s., CONTAINING UPWARDS OF

**4,000 ILLUSTRATIONS of**  
**SURGEONS' INSTRUMENTS & APPLIANCES;**

INSTRUMENTS, &c., FOR VETERINARY PURPOSES;

DRUGGIST'S APPARATUS, INSTRUMENTS, UTENSILS,

And other requisites employed in Pharmacy and the Dispensing of Medicines;

MEDICAL GLASS AND EARTHENWARE; MEDICINE CHESTS;

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**DRUGGISTS' SUNDRIES OF ALL KINDS;**

Shop Fittings, Counters, Glass Cases, Desks, Show Stands, &c., &c.,

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And will be PRESENTED GRATIS to all Chemists and Druggists, at Home and Abroad, having accounts open with the Firm.

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BY HER MAJESTY'S



ROYAL LETTERS PATENT.

**ARNOLD & SONS'**

PATENT SIMPLEX

**GARDEN PUMP AND FIRE ENGINE COMBINED.**

It is the most simple, portable, and durable Pump extant.

PRIZE MEDALS AWARDED by the Royal Horticultural Society, June 1881 and May 1882.  
 FIRST-CLASS CERTIFICATE, Great Flower Show, Crystal Palace, May 1882.

*Extract from THE IRONMONGER.*

"Most other apparatus have either a packed piston or an indiarubber air-ball, and it is well known that the packing of pistons requires frequent attention, for if not constantly used and kept greased it dries and rots, and when required is absolutely useless. On the other hand, all indiarubber articles, however good, in time undergo some molecular change, and in the course of a few years, at most, become absolutely valueless. In hot climates especially, and in dry weather, these defects are apparent. These two serious drawbacks are entirely obviated in the 'Simplex', and among the advantages claimed for it may be mentioned that it has no indiarubber air chamber, the water itself, by an ingenious arrangement, forming its own packing. It is so effective that a continuous jet of water may be thrown to a considerable distance with the greatest ease. But what is more important is, that the 'Simplex' is always ready for immediate use, no matter how long it has lain by."

*Extract from JOURNAL OF HORTICULTURE.*

"ARNOLD'S 'Patent Simplex Garden Pump' appears to be a most valuable garden appliance. Having given it a fair trial we are able to say that it is one of the best water ejectors that has come under our notice, and will be useful in both gardens and forcing houses. It is very easy to work, maintains a continuous stream of water of considerable force, and cannot get out of order. It is so constructed that no indiarubber or other packing is needed; in fact, a part from the pipe by which the water is conveyed to the nozzle (and the wooden handle), there is nothing but metal employed in its manufacture. On the pump being placed in a pail or other vessel of water, all that is necessary is to press down the piston, and the spring in the cylinder causes it to rise promptly for the next stroke, and whatever water is not forced through the nozzle passes down the interior of the cylinder, not a drop touching the operator. We shall be surprised if this most easily worked and efficient contrivance for washing wall trees, roses, and plants generally, does not become a great favourite with amateurs. It is a miniature garden engine of real utility, and possesses the elements of simplicity and durability in a very marked manner."

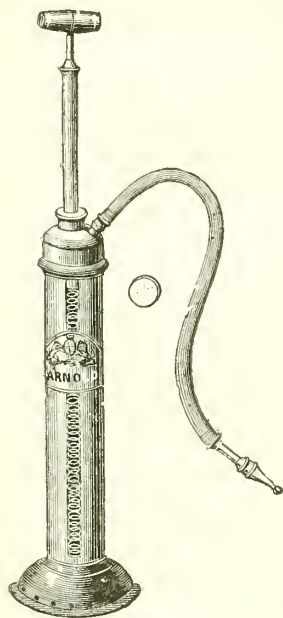
PRICE, WITH JET AND ROSE COMPLETE, £2.

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INSTRUMENT MANUFACTURERS, BY APPOINTMENT, TO HER MAJESTY'S GOVERNMENT,

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ESTABLISHED 1819.

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THE BLACK AUTOCOPYIST { Actual Lithographic reproductions.

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Prices from 21s. to 45s. complete.

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Prices from 6s. 6d. to 34s. complete.

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No washing required. 100 Copies obtained for 2½d.

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OR OF THE**COPYING APPARATUS COMPANY,**

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*Any one infringing these Patents will be immediately proceeded against.*

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**ARNICATED**

WHITE FELT

**CORN AND BUNION PLASTERS,**

INVENTED AND ESTABLISHED BY

**HENRY YOUNG,**

A.D. 1846,

AND FAVOURABLY KNOWN ALL OVER THE GLOBE.

SUPPLIED BY ALL WHOLESALE HOUSES.

*N.B.—Please see that YOUNG'S Goods are supplied, as there are many worthless imitations.*

Manufactory, 72 Clerkenwell Road, London, E.C.

(LATE OF CARTHUSIAN STREET.)

**FINZELBERG'S****PEPSINE PORCI, P.B. OR P.G.**THE MOST RELIABLE & ALWAYS  
UNIFORM.See "BRITISH MEDICAL JOURNAL,"  
July 30th, 1881.Apply to all Wholesale or Retail  
Chemists and Druggists.



# Notice to the Trade.

## GENUINE EAU DE COLOGNE

MANUFACTURED BY

JOHANN MARIA FARINA,

JULICH'S PLATZ No. 4,

A DESCENDANT FROM THE

*Original Manufacturer of this Valuable Perfume,*

IS KNOWN THROUGHOUT THE WORLD AS

## No. 4,

AND SOLD BY ALL THE LEADING WHOLESALE HOUSES.

In 2 oz. Bottles.

In 4 oz. Bottles.

In 6 oz. Bottles.

In 8 oz. Bottles.

In reputed ½-Pint, Wickered.

In reputed Pint, Wickered.

In reputed Quart, Wickered.

In 4 oz. Bottles, Wickered.

## JOHANN MARIA FARINA,

JULICH'S PLATZ No. 4,

COLOGNE-ON-THE-RHINE.

By Special Appointment to the Prince of Wales and to several Imperial and Royal Courts.

Possessor of PRIZE MEDALS and DIPLOMAS of the Exhibitions at LONDON, 1851; NEW YORK, 1853; LONDON, 1862; OPORTO, 1865; CORDOVA (Argentine Republic), 1871; and at VIENNA, 1873; SANTIAGO (Chili), 1875; PHILADELPHIA, 1876; CAPE TOWN (South Africa), 1877 (Gold Medal); SYDNEY, 1879; and MELBOURNE, 1880.

Sole WHOLESALE Agents for the United Kingdom and Colonies,

## FICKUS, COURTENAY & CO.

ST. DUNSTAN'S BUILDINGS, GREAT TOWER STREET, LONDON.

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THE MOST PROFITABLE BRAND.

THE FIRM OF MARIA CLEMENTINE MARTIN,

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Of COLOGNE, having been awarded the SPECIAL FIRST PRIZE MEDAL for their celebrated

# EAU DE COLOGNE

AT THE

SYDNEY EXHIBITION, 1879,

Have now the pleasure to announce to the Public that they have also obtained the FIRST PRIZE MEDAL at the

MELBOURNE EXHIBITION, 1880.

They trust that the above distinctions conferred upon them by such expert judges will be sufficient guarantee that the Eau de Cologne of their manufacture is, **without doubt, the best.** They beg to append a List of Prize Medals obtained at other Exhibitions:—

LONDON, 1851 and 1852.

NEW YORK, 1853.

LONDON, 1862.

RHENISH PROVINCES, 1852.

PARIS, 1855.

VIENNA, 1873.

The above firm only export to England their DOUBLE Eau de Cologne, and request their customers, in comparing the prices of the different Brands, to take into consideration that the bulk of those sold with the white label are Single (or only half strength of the Double), which enables the Makers to sell at a low price with great profit. If they will trouble to compare the subjoined prices with those of any firm manufacturing **Eau de Cologne DOUBLE**, the comparison will be greatly in favour of our Brand.

## PRICE LIST.

Duty Paid, Net. In Bond.

No. 1, $\frac{1}{2}$ Shorts	...	...	...	...	...	...	8/-	...	5/-
No. 2, Shorts	...	...	...	...	...	...	15/-	...	10/-
No. 3, „ finely Wickered	...	...	...	...	...	...	20/-	...	15/-
No. 4, Long Green Flasks	...	...	...	...	...	...	15/-	...	10/-
No. 5, Wickered Bottles (Small)	...	...	...	...	...	...	25/-	...	17/3
No. 6, „ „ (Medium)	...	...	...	...	...	...	50/-	...	34/6
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Small Cases assorted to order (of not less than £3 value in bond) delivered free freight, less  $7\frac{1}{2}$  per cent. discount.

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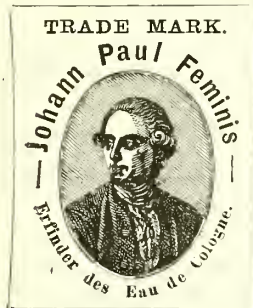
**ARTHUR I. JOSEPH, ST. LEONARDS-ON-SEA.**

London Depot: 1 & 2 Australian Avenue, London, E.C.



# THE ONLY GENUINE EAU DE COLOGNE.

IN accordance with a Decision of the "Tribunal Civil de la Seine" of the 25th March, 1865, and the Paris Court of Appeal of the 26th April, 1866 (against the Sieur Jean Maria Farina, Julichsplatz No. 4, "*maison fondée en 1855*"); as also of the "Tribunal de la Seine" of the 4th May, 1877, and of the Paris Court of Appeal of the 28th June, 1878 (see the "*Gazette de Tribunaux*"\* of the 7th May, 1866, and the 19th July, 1878), the truth is reached by innumerable arguments, viz.: That *Johann Paul Feminis*, in 1695, invented Eau de Cologne, and left the secret of the manufacture only and alone to his nephew, *Johann Anton Farina*, "*zur Stadt Mailand*" ("à la ville de Milan"), Hochstrasse No. 129, Cologne.



Hereby it is therefore established, that neither Johann Maria Farina, "Julichsplatz No. 4," nor Johann Maria Farina, "gegenüber dem Julichsplatz" (according to his own avowal, founded in 1709—therefore fourteen years later than 1695) is the oldest distiller of Eau de Cologne, but that this title lawfully belongs to the undersigned firm, which, through a Decision of

the Royal Rhenish Court of Appeal in Cologne, of the 1st February, 1879, is alone authorised to adopt and use as Trade Mark the likeness of Feminis, taken from an original portrait in their possession.

## JOHANN ANTON FARINA,

At the Sign of the City of Milan, the oldest Distiller of the ONLY GENUINE EAU DE COLOGNE,  
No. 129 HIGH STREET, COLOGNE,

Oldest Purveyor to the Royal Court of Prussia by appointment of September 27th, 1817, and August 27th, 1877, &c.

\* Verbatim copies will be sent post-free on application.

## RIMMEL'S NEW SANITARY APPLIANCES.



RIMMEL'S AROMATIC OZONIZER, a fragrant powder which, simply spread on a plate in apartments or places of public resort, evolves the refreshing and healthy emanations of the Pine and Eucalyptus, and produces a quantity of *Ozone*, the great air purifier. Its clean and portable nature renders it far preferable to liquid disinfectants. It is in use in the principal Hotels, Clubs, and Theatres, and also in the Saloons and Cabins of several Lines of Steamships. In 4-oz. Tins, 1s.; 1-lb. Tins, 3s. 6d.; Spreading Plate, 6d.

RIMMEL'S OZONIZED EAU DE COLOGNE, LAVENDER WATER, or FLORIDA WATER, sprinkled on a pad hung up in the air, destroys bad smells and noxious effluvia in sick rooms, closets, &c. It is recommended also to be used on the handkerchief when attending crowded places, visiting the sick, or travelling by land or sea. Price, 2s. 6d. and 5s. per Bottle; Pad, 1s.

RIMMEL'S AROMATIC OZONIZED CASSOLETTES, to carry in the pocket and preserve from infection, 6d.

N.B.—500 detailed prospectuses, containing certificates and testimonials, sent with name and address to every purchaser of 3 dozen Aromatic Ozonizer, 1s. size.

SOLD BY ALL CHEMISTS AND DRUGGISTS. THE USUAL ALLOWANCE TO THE TRADE.

EUGENE RIMMEL, PERFUMER TO H.R.H. THE PRINCESS OF WALES, 96 STRAND, LONDON.

ESTABLISHED 1849.

## CURRY, LLOYD & CO.

(Late ALLEN PEARCE & CO.),

## DRUGGISTS' SUNDRYMEN,

TRUSS AND SURGICAL APPLIANCE MAKERS,

10 and 11 BATH STREET, BRISTOL.

NEW PRICE LIST (1882) WILL BE SENT ON RECEIPT OF BUSINESS CARD.

## WHITE AND SOUND TEETH.

# JEWSBURY AND BROWN'S ORIENTAL TOOTH PASTE.

This old-established and increasingly favourite Dentifrice has been Fifty Years before the Public. It is warranted to retain its properties and keep in good condition in any climate.

The original and only genuine is manufactured solely by

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CHEMISTS, MANCHESTER,

and is distinguishable by the Trade Mark, printed in red and green, a facsimile of which is annexed. Particular attention should be paid to this guarantee of genuineness, as numerous imitations are offered.

Sold universally by Chemists and Perfumers, at 1s. 6d. and 2s. 6d.



The Trade and Shippers supplied by the leading houses in London and elsewhere. Bills and Show Cards forwarded on receipt of address card, and directions for enclosure.

## WOODS' ARECA NUT TOOTH PASTE.

For Removing Tartar and Whiteness the Teeth, without injuring the Enamel. Sold in Pots, at 6d. and 1s. each.

## WOODS' QUININE, CANTHARIDINE, & ROSEMARY HAIR CREAM

(WITH GREASE). Restores the Hair if weak or falling off. Price 9d., 1s. 6d. and 3s. 6d. per bottle.

## WOODS' QUININE, CANTHARIDINE, & ROSEMARY HAIR WASH

Similar to the above (without grease). Price 1s. 6d. and 3s. 6d. per bottle.

## WOODS' DANDRUFF POMADE.

Never fails. 1s. per pot.

Proprietor: W. WOODS, M.P.S., Chemist, PLYMOUTH.  
SOLD WHOLESALE BY ALL LONDON HOUSES.

## OKELL'S ORIGINAL MONA BOUQUET

Retail, 1/6, 1/3, and 3/6; Wholesale, 9/6, 15/6, and 30/6 per doz.

This much-admired Perfume (prepared by the Widow of the late Joseph Okell), may be obtained from the leading Patent Medicine Houses, Wholesale Druggists, and Druggists' Sundry Dealers.

Applications for WHOLESALE Agencies to be made to the SOLE CONSIGNEE, THOMAS WEST, Chemist, Stretford, Manchester.

## Dr. C. R. Coffin's AMERICAN DENTIFRICE.

Prepared only by WILLIAM DARLING, Chemist, Manchester. May be had from S. Maw, Son, & Thompson; Barclay & Sons; F. Newbery & Sons; Sanger & Sons; and any Wholesale House in London. Price 2s. per Box, and Family Jars 10s. each.

## EWENS' CLARIFIED LARD, MARROW, SUETS, AND OILS.

JAMES EWEN & SONS are induced to give further publicity to these articles, the continued demand by all who have used them being satisfactory proof "that where purity of basis" in ointments, &c., is required, they are most desirable.

By their method of purifying, the fats are not chemically altered, but simply divested of all particles tending to decomposition, they are consequently available for the most delicate preparations.

Adeps. Benz. B. P. and Pharm. Lard (*vide* P. J. Vol. I. No. 8). Direct, "for Cash only," from

**JAMES EWEN & SONS' CLARIFIED FAT WORKS,**  
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Or through any of the Wholesale Houses, with their usual credit, at a small advance.

CAUTION.—See that each package bears their label with name and weight.

## BEDDARD'S BELGRAVIA TOOTH-PASTE

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Is entirely different from any article of the kind, very much liked by customers, a most effectual dentifrice, and handsomely put up in large jars,

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**LIBERAL DISCOUNT TO LARGE BUYERS.**

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**TO DENTISTS AND CHEMISTS.**—Every description of Artificial Teeth made at greatly reduced charges. Best work and best materials only.

An Upper or Lower Set, inclusive of Teeth Rubber, &c., £1 1s.

Ditto, ditto, on Platina, £2 2s.

Send for Price List.

Twenty years' experience in mechanical work.

**LESSONS GIVEN IN MECHANICAL DENTISTRY.**

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**PREPARED SILVERY WHITE GUTTA PERCHA ENAMEL,**

FOR STOPPING DECAYED TEETH.

**SILVERY WHITE GUTTA PERCHA ENAMEL.**

36 squares in a box, to Retail at 1d. each; Wholesale Price, 1s. per box.

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On Show Card of half-gross, to Retail at 1d., at 6s. per gross.

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12 sticks in a glass-lid box, to Retail at 3d.; Wholesale Price, 1s. 3d. per box.

**SILVERY WHITE GUTTA PERCHA ENAMEL.**

12 sticks in a glass-lid box, each stick enclosed in a Gelatine or Gilt Case; Wholesale Price, 2s. per box.

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12 boxes on a Show Card, to Retail at 6d. per box; Wholesale Price, 3s. 6d. per card in a box.

**SILVERY WHITE GUTTA PERCHA ENAMEL.**

In 1 oz. Sheet, 12s. per dozen.

**SILVERY WHITE GUTTA PERCHA ENAMEL.**

In 4 oz. Sheet, 3s. 6d. each.

P. A. S. can supply the above to Wholesale Houses, in any quantity, with their Name stamped upon each piece, cut in sticks any length.

The above to be obtained of all Wholesale Houses. PRICE LIST AND SAMPLES SENT POST FREE.

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And will be forwarded Free per Post on application.

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Testimonials from all parts of the World on Wrapper round each Box.

*Patronised by their late Royal Highnesses the Duchess of Kent and the Duchess of Gloucester.*



## CORLEY'S GREEN GUM PLAISTERS.



For Corns and Bunions.

In Boxes, 1/1<sup>2</sup> and 2/9 each, duty included. The 2/9 Box is equal to three small ones.

THE REWARD OF MERIT.

The rapidly increasing demand for Corley's Green Gum Plaisters is a guarantee that its marvellous powers are becoming known and appreciated by all. This cure will be found to be exactly what it is represented, relieving immediately the most excruciating pain, and with a few applications working a permanent cure. It has never been known to fail where the patient has followed the directions, and used it faithfully. It does not burn nor blister, nor has it any injurious effects; the smallest child can use it with the utmost impunity. Give it a trial. It has never been known to fail; why should it fail in your case?

MAY BE WORN WITH THE TIGHTEST BOOT.

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## PHOENIX

ESTABLISHED A.D. 1815

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## MARKING INK



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STANDARD ARTICLE

PREPARED ONLY BY THE WIDOW OF THE LATE  
JOHN MURPHY

CHEMIST AT THE ORIGINAL ESTABLISHMENT

11, NILE STREET, EAST ROAD, HOXTON N.



NO OTHER ADDRESS — BEWARE OF WORTHLESS IMITATIONS.



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# WHITAKER & GROSSMITH'S PURE WHITE GLYCERINE SOAP.

Richly Perfumed, and guaranteed to contain the necessary quantity of GLYCERINE for effectually imparting to the SKIN the softening and healing properties for which it is so justly famed. 1s. 6d. Boxes of Three Tablets, 12s. per Dozen Boxes.

**SELECT TOILET PREPARATIONS, extensively increasing in demand, which attests their excellent quality.**

TOILET SOAPS. Per doz.		BOUQUETS. Per doz.		POMADES, &c. Per doz.	
Cent-Fleur (copyright) 2/6	Boxes of 3 tablets 20/	Cent-Fleur (copyright)		Cent-Fleur (copyright) ...	8/ 12/ & 20/
Jockey Club " 1/6	" 12/	Jockey Club Bouquet...	In Glass Stopped or Sprinkling cap Bottles.	Petroleum Pomade ...	12/ & 18/
Sandringham " 1/6	" 12/6	Ess Bouquet ...		Brilliantine ...	8/ 12/ & 20/
Eucalyptus Oil " 1/6	" 12/	Frangipanni ...		Anglo Eau de Cologne ...	8/ & 12/
Wild Thyme (Thymol) 1/	" 8/	Pearl of Perfumes ...		Eucalyptus Vinegar ...	12/ & 20/
Semi-Cut Bars " 1/	Bars of 6 kinds 8/6	Lime Tree Blossoms ...		White Cherry Tooth Paste	8/ & 12/

Trade Price Lists sent and Orders executed through Wholesale Houses, or direct from the Manufacturers,

**WHITAKER & GROSSMITH, 22 SILK STREET (REMOVED FROM 120 FINE STREET), LONDON, E.C.**

## JAMES'S TOILET SPECIALITIES.

JAMES'S HERBAL OINTMENT, for the Cure of Pimples, Black Specks, Blisters, &c., and taking away Tan Freckles, Sunburn, &c. Sold by all Chemists, 1/1½ and 2/9 per box.

## JAMES'S DEPILATORY,

For the instant removal of Superfluous Hair. Sold by all Chemists, 1/- per box.

## JAMES'S HERBAL POMADE,

For Promoting the Growth of the Hair, Whiskers, Beard, Moustachios, Eyebrows, and Eyelashes. Sold by all Chemists, 1/- and 2/- per box.

These Articles are well worthy the attention of Chemists, Wholesale Houses, and others, as they are being well advertised.

**JAMES & CO., 226 Caledonian Rd., LONDON, N.**

## GREENSILL'S FAR-FAMED MONA BOUQUET

THE ORIGINAL AND ONLY GENUINE.

The great popularity of this exquisite Perfume is a proof of its excellence and superior qualities.

**T. S. GREENSILL, Chemist, Douglas, Isle of Man, Inventor, Proprietor, and Maker.**

AGENTS—LONDON: Sanger; Maw; Edwards; Newbery; Mather; Barclay; Whittaker & Grossmith; Hovenden; Parton & Osborne; Butler & Crispe; Tidman & Son; Barron & Squire; Wright, Layman & Umney; Jno. Thompson; Burgoyne, Burdidge & Co.; Grimwade, Ridley & Co.; Bais Brothers. LIVERPOOL: Evans, Sons & Co.; Clay, Dod & Case; B. Sumner & Co.; Raines & Co. MANCHESTER: J. Woolley; Lynch & Bateman; Jewsbury & Brown; Mather. EDINBURGH: Duncan & Flockhart. DUBLIN: M'Master; Hodgson. YORK: Sutcliffe & Headley; Clark, Bleasdale. THIRSK: Wm. Foggitt. BRISTOL: Ferris & Co. LEEDS: Goodall & Backhouse. BIRMINGHAM: Churchill & Son; P. Harris & Co.; Parton & Osborne; Southall Bros. & Barclay.

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Introduced in 1852.

Registered Trade Mark—"Tower of Refuge, Douglas Bay."

## Robare's Aureoline, OR GOLDEN HAIR WASH.

The attention of the Trade is respectfully called to the above Article, now having a large sale, and giving an excellent profit to the Retailer.

5/6 size, 36/ per doz. 10/6 size, 72/ per doz.

SOLE WHOLESALE AGENTS—

**R. HOVENDEN & SONS, LONDON.**



Used and recommended by several eminent Physicians. A PAINLESS & UNFAILING REMEDY.

This preparation has the advantage over similar preparations in being quite painless. After 2 or 3 applications the Corn—which will be destroyed—can be easily picked out, leaving the part healthy and free from pain.

It is put up in cases containing a Bottle of Paint, Adhesive Plaster, and Camel-hair Pencil, fixed, in dozens, on neatly-bronzed show-cards, with counter bills.

Sample free by post, 71d.

Prepared only by the Inventors, **J. HARGREAVES & SON, Chemists, 108 Fylde Road, Preston.**

London Depot: 11 & 2 Australian Avenue, E.C. Liverpool Depot: 149 Duke Street. Sold by all Patent Medicine Warehouses and Druggists' Sundriesmen. AGENTS WANTED IN THE COLONIES.

## A PERFECT BOON TO MOTHERS!

## ROGERS' "NURSERY" HAIR LOTION.

One application is guaranteed to destroy all Nits and Parasites in Children's Heads, and immediately allay the Itching and Irritation.

It is now used in Thousands of Families with the greatest success, and all who have tried it are delighted with the effect, and declare it to be worth A GUINEA A BOTTLE.

PREPARED ONLY BY  
**WILLIAM ROGERS, CHEMIST,**

**BEN JONSON ROAD, STEPNEY, E.**  
Sold in large Bottles, price ONE SHILLING. Sample Bottle, 7d.

SOLD BY ALL CHEMISTS AND PERFUMERS.

Observe! Genuine only in Yellow Wrapper, White Label.

WHOLESALE AGENTS.—Barclay & Son; Edwards & Son; Maw, Son & Thompson; Millard & Son; Sanger & Sons; Newbery & Sons.

## ORTH'S GLYCERINE.

Manufacturer: G. H. ORTH, Barmen.

S. G. 1,260, Double Distilled, Perfectly Colourless and Odourless, will stand every chemical test. Lower S. G.'s and inferior qualities also supplied.

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**H. POTH & CO.,**

4 SUGAR LOAF COURT, 50 LEADENHALL ST., E.C.

Samples and Prices on application.



# ROWLAND'S TOILET ARTICLES,

20 Hatton Garden, London,

Have been known for the last 80 years all over the world, and being well advertised, and always finding a ready sale, are well worthy the attention of Chemists, Druggists, and Storekeepers.



## ROWLAND'S MACASSAR OIL

Is universally held in high repute for its unprecedented success during the last 80 years in promoting the growth, restoring, improving, and beautifying the human hair. It prevents hair from falling off or turning gray, strengthens weak hair, cleanses it from scurf and dandruff, and makes it beautifully soft, pliable, and glossy. For children it is especially recommended, as forming the basis of a beautiful head of hair, while its introduction into the nursery of Royalty is a sufficient proof of its merits. Sizes, 3s. 6d., 7s., 10s. 6d. (equal to four small), and 21s. per bottle.



## ROWLAND'S KALYDOR

Is a most refreshing preparation for the Complexion, dispelling the cloud of languor and relaxation, allaying all heat and irritability, and immediately affording the pleasant sensation attending restored elasticity and healthful state of the skin. Freckles, Tan, Spots, Pimples, Flushes, and Discoloration fly before its application, and give place to delicate clearness, with the glow of beauty and of bloom. In cases of sunburn, or stings of insects, its virtues have long been acknowledged. Price 4s. 6d. and 8s. 6d. per bottle.

## ROWLAND'S ODONTO

Or PEARL DENTIFRICE is of inestimable value in preserving and beautifying the teeth, strengthening the gums, and giving a pleasant fragrance to the breath; it eradicates tartar from the teeth, prevents and arrests decay, and polishes and preserves the enamel, to which it imparts a pearl-like whiteness. Its unprecedented success for more than half a century shows the universal favour in which it is held, while the fact of its being entirely free from any acid or mineral ingredients constitutes it the safest and purest tooth powder ever used.

## ROWLAND'S EUKONIA

Is a new and fragrant Toilet Powder, specially recommended to ladies. Each box has inside the lid a certificate of purity from Dr. REDWOOD, Ph.D., F.C.S. 2s. 6d. per box.

**IMPORTANT CAUTION.**—To protect the public from fraud, ALL ROWLAND'S ARTICLES have on the WRAPPER their SIGNATURE, "A. ROWLAND & SONS," in red ink; the genuine Kalydor has a 6d. Government stamp across the stopper, and the genuine Odonto a 3d. Government stamp across the box. Buy only ROWLAND'S articles, of 20 HATTON GARDEN, LONDON.

COUNTER BILLS, SHOW CARDS, &c., CAN ALWAYS BE HAD ON APPLICATION.

# THOS. HODGKINSON-PRESTONS & KING,

WHOLESALE & EXPORT DRUGGISTS,

Beg to inform their friends they have REMOVED to their  
New Warehouses,

81 BISHOPSGATE STREET WITHOUT,  
AND  
26 DUKE STREET, E.C.

## RANDALL'S BLACK CURRANT LOZENGES.

	Net Cash.	To Acct.
Plain Black Currant, old square ..	2 6	2 8
" " " rough oval ..	2 6	2 8
Black Currant and Ipecacuanha ..	2 6	2 8
Black Currant and Tannin.. ..	3 0	3 3
Black Currant Voice (warm astringent) ..	3 0	3 3
Black Currant Cough Lozenges * ..	3 6	3 10

(\* Ipecac. and Morph., strength as "B. P.")

In Bottles, 1 lb., 2 lbs., 4 lbs., and 7 lbs. For Exportation, in soldered tins, of any size. From EDWARDS, London; through any Wholesale House; and from the Manufacturers,

**RANDALL & SON, Southampton,**

Who will forward Samples by post on application.

Also, BROWN COUGH LOZENGES, 2s., 2s. 2d.; 7 lbs. stamped with name free, and MUSK LOZENGES (Special), 2s. 6d., 2s. 8d.

N.B.—Medical Lozenges of every kind,

Including those of the Pharmacopoeia of the Hospital for Diseases of the Throat, London.

## CASH *versus* CREDIT.

SEND FOR

**ALFRED BASTIN'S**

**NETT CASH PRICE LIST**

(POST FREE ON APPLICATION).

**A. BASTIN, Wholesale & Export Druggist,**  
29 FENNEL STREET, MANCHESTER.

(MANY YEARS WITH ALLEN & HANBURYS, LONDON.)

# H. BROOKS & CO.,

## COLLAPSIBLE TUBE MANUFACTURERS,

PATENTEES AND SOLE MANUFACTURERS OF THE

### PORTABLE METAL SPRINKLER STOPPER,

AND DEALERS IN

### GLASS BOTTLES FOR PERFUMERS AND OTHERS.

#### STEAM FACTORIES:

31 LIME STREET, CAMDEN ROAD (COUNTING HOUSE),  
(AND SHOW-ROOMS),

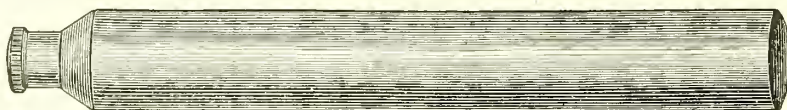
31 to 36 CUMBERLAND MARKET, REGENT'S PARK,

AND

BARTHOLOMEW ROAD, KENTISH TOWN, LONDON, N.W.

ESTABLISHED 1810.

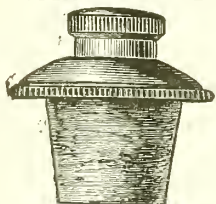
COLLAPSIBLE TUBES OF ALL SIZES.



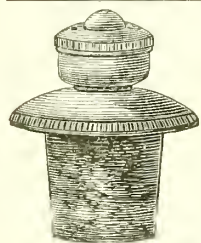
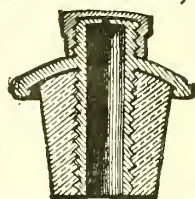
For Perfumes, Artists' Colours, Soaps, Cosmetics, Creams, Oils, Varnishes, &c. These Tubes are inexpensive and portable, and may be applied to many useful purposes besides those above mentioned.

SOLE MANUFACTURERS AND PATENTEES OF

### THE PORTABLE METAL SPRINKLER STOPPER,



With Cork fitted thereon for bottles of any size, and having apertures of various dimensions, especially adapted for Perfumes, Hair Washes, Lime and Glycerine Essences, &c. These handsome stoppers give a character and finish to the most ordinary bottles to which they may be applied. Gilt or plain; and put up if required in handsome glass lid boxes, suitable for shop counters and show cases, at moderate prices.



### THE "TORSION" PATENT SPRINKLER.

The two designs, Nos. 18A and 19A, are those to which we direct special attention, as sizes being in general use; other sizes will follow promptly to meet all requirements, on which Caps with two or more holes will be introduced to meet the public taste.



No. 18A.

No. 19A.

Particular attention is called to the latest improvement in our Patent Metallic Stopper, the "Torsion."

This New Stopper adheres to the design of the original patent, which has been universally acknowledged as an ornamental and inexpensive article for the Toilette, as possessing all the advantages of a "Permanent and Indestructible Stopper, suitable for Bottles of all Sizes and Shapes," with the additional security it affords, that the Cap can never be entirely unscrewed, consequently it cannot be lost. It is specially effective as a Sprinkler, while giving a more prompt and copious, yet economic supply, through the improved action of the Cap. Such combined advantages, in an article of exquisite finish, have long been desired, and it is thus submitted for general approval, and its usefulness when tried will be appreciated by all.

Illustrations, Price Lists, &c., can be had on application, or through any Wholesale House in town or country. All Orders received direct will be promptly attended to.

**CAUTION.**—All Stoppers of our Manufacture are made of Pure Tin, and have the name of H. BROOKS & CO. stamped on the under side of the rim.

All Tubes are made of Pure Tin unless specially ordered of Mixed Metal, from the smallest size up to 13 in. by 2½



SPECIAL  
QUOTATIONS.PERFUMERY  
Of every known  
kind.**T. F. BRISTOW & CO.**

Wholesale Perfumers &amp; Fancy Soap Makers.

TOILET SOAPS  
Of every  
description.PRICE LISTS ON  
APPLICATION.**Concentrated (various)  
CHOICE ESSENCES****(IN BULK).**

No. 30, 12/ for 20 fluid ounces.  
No. 24, 9/6 " " "  
No. 18, 8/ " " "  
AND IN doz.  
Corked Bottles .. 3/6 4/ 7/ 8/ 12/  
Sprinklers ..... 4/ 7/6 8/ 12/  
Stop'd Bottles .. 9/ 12/ 14/ 18/  
and upwards.

**POMADES, &c.**

Assorted (tall or squat) 4/ and 8/  
Nursery (large) ..... 4/ and 9/  
Lime Juice & Glycerine 4/ and 8/  
Glycerine and Lime  
Cream ..... 4/ and 8/  
Brilliantine ..... 8/ and 12/  
(separable and unseparable.)  
Brilliantine (White Rose),  
Stopped Bottles .. 8/ and 12/  
Cherry Tooth Paste .. 4/ and 8/  
Arecia Nut " " 4/ and 8/  
Lip Salve, pots & sticks 4/ and 8/

**Special Soaps in Boxes.**

Cold Cream Soap, doz.  
3 tablets in box 12/ and 20/  
Coal Tar Soap, ditto. 8/ and 12/  
Carbolic, ditto ..... 8/ and 12/  
Glycerine & Oatmeal do. 8/ and 12/  
" Transparent, do. 8/ and 12/  
" and Carbolic, do. 8/ and 12/  
Lavender (Sweet), do. 8/ and 12/  
Baby Soap, 4 tablets in box 9/  
" 12 ditto 27/  
Family Economic, 4 ditto 8/  
" 12 ditto 24/  
Thymol, 3 tabs. in box 8/ and 12/

**Medicated Soaps****(IN WRAPPERS).**

Carpet & Cloth Soap 3/6 and 7/ dz.  
Dog Soap ..... 3/6 and 7/ "  
Coal Tar (Family) 18/ and 27/ gr.  
Carbolic " 18/ and 27/ "  
Camphrid Winter 27/ and 39/ "  
Fullers' Earth ..... 3/6 dz.  
Jewellers ..... 4/ "  
Petroleum ..... 4/ "  
Pumice Stone ..... 3/9 "  
Juniper Tar ..... 4/ "  
Sulphur ..... 4/ and 8/ "  
Zinc ..... 4/ and 8/ "

**SOAPS (in Bulk).**

Almond ..... at 56/ 64/ 74/ 84/ and 112/  
Brown and White Windsor  
Curd ..... per cwt.  
Elder Flower .....  
Glycerine " and Almond ....  
Honey " and Almond .....  
Oatmeal .....  
Marshmallow .....  
Rose .....  
Sunflower .....  
Transparent Glycerine ....

5 BISHOPSGATE AVENUE, CAMOMILE STREET, LONDON.

TRADE  
MARK.

—"COAGULINE."—

TRADE  
MARK.

KAY'S New TRANSPARENT CEMENT for BROKEN ARTICLES.

"Clear as crystal," "stronger than glass," "tough as leather."  
6d., 1s., 2s., in boxes or on cards.

Worthy of Recommen-  
dation, and well known.  
KAY'S COMPOUND ESSENCE OF LINSEED, ANISEED, SENEGA,  
SQUILLS, TOLU, ETC., ETC., "The Stockport Remedy" for Coughs and  
Colds. Cures nine cases out of ten. In bottles, 9d., 1s., 1s. 1d., 2s., 9d., 4s., 6d., &c.  
LINSEED LOZENGES.—(Solidified Linseed Tea).—An agreeable sweetmeat,  
most demulcent and nourishing, which may be taken in any quantity by  
Children and Adults, for their soothing and beneficial effect. Packets, 6d.  
CHLORO-LINSEED COUGH LOZENGES.—A medicated Linseed Extract,  
for out-door use, on leaving a heated room, &c. Demulcent, Expecto-  
rant, Warming and Soothing. Packets, 6d.  
LINUM CATHARTICUM PILLS (of the Purgine Linseed). Purely vegetable;  
the most wholesome aperient and corrective for young persons and adults.  
Boxes, 9d., 1s., 1s. 1d., 2s., 9d., of all Chemists.  
KAY'S TIC PILLS.—A specific and pure nervous Tonic. The best form of  
administering the Quinine, Iron, and other Tonics of which they are largely  
composed. Boxes, 9d., 1s., 1s. 1d., 2s., 9d., of all Chemists.  
STRAMONIUM CIGARETTES.—For Asthma. 2s. per dozen.  
CUE CEMENT.—For Tipping Billiard Cues. 1s. and 2s.  
KAY'S CUE-TIP FIXER, with improved Buffer-Spring, &c. 2s., 6d. each.

For Circulars, Show Cards, Specimens, &amp;c., address:—

KAY BROTHERS, M.P.S., STOCKPORT.

Sold by all the Wholesale Druggists, Sundriesmen, and Medicine Vendors.

**PURE SPIRITS OF WINE**

FOR

TINCTURES, ESSENCES, PERFUMES, &amp;c.,

OXFORD ROAD DISTILLERY, MANCHESTER.

MESSRS. SMITH &amp; GIBB

Beg to call the attention of CHEMISTS and DRUGGISTS to the under-  
mentioned Prices of Pure Spirits of Wine:—

Strength per cent.	Specific Gravity.	Price per gallon.
63 over proof ..	0.8238	20/6
60 " " "	0.8298	20/0
55 " " "	0.8366	19/6
50 " " "	0.8482	19/0

Terms—Cash on Delivery. Jars to be returned or paid for.

For Exportation, Cask included, 4/0, 60 O.P., F.O.B.

Orders from the country must be accompanied with a remittance,  
including the price of the Jars, which are charged as follows:—2 galls. 3/-;  
3 galls. 3/6; 4 galls. 4/-; 5 galls. 5/6; 6 galls. 6/-. When the empties are  
returned the money will be repaid.

BURROUGH'S

SPIRITUS RECTIFICATUS, P.B.

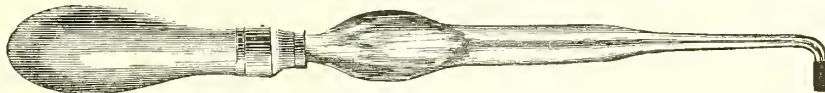
**SPIRITS OF WINE** CHEMICALLY  
PURE.

The Best English Grain Spirit, Free from Fusel Oil.

56 over proof, 20s. per gallon; 60 over proof, 20s. 6d. per gallon; less 6d. per gallon for five gallons. Lower quotations for  
quantities. Cash on delivery or with order. Country Orders must contain remittance or reference to London House.

CALE STREET DISTILLERY, LONDON, S.W.

Also Duty Free for Exportation. Best Methylated Spirits at Lowest Prices.

**THE UNIVERSAL TOOTHACHE SYRINGE**Retail,  
6d. each.Wholesale,  
4s. per dozen.

Is a great improvement upon the "DENTAL SYRINGE," as the fluid is contained in a glass bulb, which enables its contents to be seen, also prevents the  
liability to evaporation through long keeping or exposure.

**THE UNIVERSAL CORN AND WART PENCIL.**

1 doz. mounted on a handsome Illustrated Show-Card, Retail, 6d. each; Wholesale, 3s. 6d. per doz. It is especially adapted  
for Export Trade, and may be safely sent to the hottest climates, as each glass tube is hermetically sealed and enclosed in a cardboard case.

N.B.—Both the above are exempt from Stamp Duty by permission of the Board of Inland Revenue.

**CONCENTRATED WATERS.**—One Ounce of these Waters added to Forty Ounces of Distilled  
Water forms a clear Medicated Water (without filtering), similar in every respect to those prepared according to the directions of the British  
Pharmacopoeia, and free from all Chemical impurity. They are prepared to supply a want long felt by Chemists and Medical Men, and by their uses  
fresh supply of any of the Medicinal Waters may be obtained at a moment's notice. They are not affected by age in any climate. N.B.—Used in the  
proportion of one part to thirty-two of water they represent the Medicinal Waters of the United States Pharmacopoeia.



	Per lb.		Per lb.		Per lb.		Per lb.
Aqua Anethi, Concent.	4/0	Aqua Cinnam. Ver. Concent.	6/0	Aqua Fœniculi, Concent.	4/0	Aqua Pimentæ, Concent.	4/0
" Anisi, "	4/0	" Cassia, "	4/0	" Menth Pip. "	4/0	" Rosæ "	8/6
" Camphoræ, "	4/0	" Flor. Aurant. "	8/6	" Ang. Con. "	6/0	" Rosæ Virgin, "	10/6
" Carui, "	4/0	" Flor. Samhuc. "	8/6	" " Virid. "	4/0		

The above are put up in Bottles of 1/4 lb. or 1 lb. and upwards, each of which has the Inventor's Protection Label over cork.

Wholesale Agents—Hearon &amp; Co., Maw, Son, &amp; Thompson, Lynch &amp; Co., London; Evans, Sons &amp; Co., Raimé

Liverpool; Woolley, Manchester; Bewley &amp; Draper, Hunt &amp; Co., Dublin; Glasgow Apothecaries' Co., Hatriok &amp; Co.,

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York. Special terms for large quantities may be had from

B. ROBINSON, Distiller and Brewer of British Wines, Church St., Pendleton, Manchester.



# FRENCH PATENT SCREW GLASS POTS & BOTTLES,

WITH METALLIC NICKLED CAPSULES.



The above new method will show advantageously Jams, Jellies, Honey, Dragés, Cachous, Pills, Lozenges, &c., is specially adapted or Export, and excels all others for neatness and elegance. Made in various new Designs—Pots, "Kalis" tube-shaped Bottles, Bocals, &c. Spécialité for Bottles for all kinds of Confectionery, Essences Manufacturers, and Sundries.

THE LARGEST ASSORTMENT IN ENGLAND.

G. V. DE LUCA, French Flint Glass Manufacturer, 6 and 7 Long Lane, LONDON, E.C.

WHOLESALE AND EXPORT AGENTS—S. MAW, SON & THOMPSON, 7 to 12 ALDERSGATE STREET, LONDON, E.C.

# WHITE FELT CORN AND BUNION PLASTERS.

SOLPORT BROTHERS, 68 Shaftesbury St., New North Road, LONDON, N.

ESTABLISHED 27 YEARS.

SOLPORT BROTHERS are the ORIGINAL MANUFACTURERS of the only genuine White Felt Corn and Bunion Plasters.  
PRICE LISTS ON APPLICATION.

# BRECKNELL'S SKIN SOAP

THE MOST SALUBRIOUS SOAP IN USE.

# BRECKNELL'S SADDLE SOAP,

Used in the Royal Stables, by the Army, and in Hunting Establishments.

THE BEST ARTICLE IN USE FOR THE PURPOSE.

BRECKNELL TURNER & SONS,  
HAYMARKET, LONDON, ENGLAND.

THE  
"BEE" BRAND  
BOTTLING  
DISPENSING & PARCEL  
WAX.

10  
PRIZE  
MEDALS.

Specially  
Warranted for  
Export to  
Hot Climates.

GEORGE WATERSTON & SONS,

Manufacturers of Sealing and Bottling Wax, Wafers, and Office Mucilage, &c., &c.  
LONDON, 9 ROSE ST., NEWGATE ST. EDINBURGH, 56 HANOVER ST.

# FOULKES' CEMENT,

AS USED AT ALL THE GOVERNMENT MUSEUMS.

Suited for any substance, from glass and china to leather, wood, or iron, and the articles joined bear washing in boiling water.

The large range of materials to which this cement is applicable, its transparency, strength, and facility in use, and the readiness with which it adheres, renders it, without doubt, THE MOST USEFUL EVER INVENTED. It is equally applicable to articles of the coarsest or the most delicate construction.

The great success which attended its introduction, now more than 20 years ago, has given rise to a host of imitations, under as many various titles, some of these being of an exceedingly crude character, and most unsatisfactory to both vendor and buyer. The above celebrated Cement is uniformly prepared and neatly put up, and is guaranteed to remain unchanged in any climate.

Professor ARCHER, Edinburg.—"I can testify most unhesitatingly to its great utility in the various occasions which continually arise in Museum work for a first-rate Cement. I have invariably found yours superior to all others, and have extensively recommended its use to all my friends."

Sold in bottles at 6d. and 1s. (equal to three of the smaller).

# FOULKES' TOILET & NURSERY POWDER.

IMPALPABLE AND DELICATELY PERFUMED.

This unique Powder possesses the emollient properties of fullers' earth, free from colour, and in a high condition of purity.

Dr. ALEX. MILNE, Edinburg, in his recent book entitled: "The Child, and how to Nurse it," says of this favourite powder, "WE RECOMMEND IT IN PREFERENCE TO ALL OTHERS."

Sold in Boxes at 6d. and 1s. Wholesale at the Patent Medicine Houses and Druggists' Sundriesmen, or from

W. J. FOULKES, OPERATIVE CHEMIST, BIRKENHEAD.

# BENARES POLISHING POWDER.

The very best for Cleaning and Polishing Brass, Copper, and Steel ever introduced. Can be obtained of all Ironmongers, Grocers, and Chemists, at One Shilling per Box.

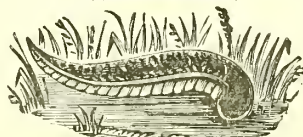
SOLE WHOLESALE AGENTS—

CHARLES DOWNS & CO.,  
SOUTHWARK, LONDON.

# SPONGE.

M. PETERSON & CO., Importers,  
66 SOUTH JOHN STREET,  
LIVERPOOL.  
For Home, Foreign, and Colonial Markets.  
Wholesale only.

HAMBRO SPECKLED.



TRADE MARK  
REGISTERED.

All Orders by Post receive immediate attention.

# LEECHES!

Warranted Healthy, Wholesale and for Exportation, Direct from Marshes.

FITCH & NOTTINGHAM,  
Leech Breeders,

MARSEILLES, & 55 PENTONVILLE  
ROAD, LONDON, N.





TRADE MARK.

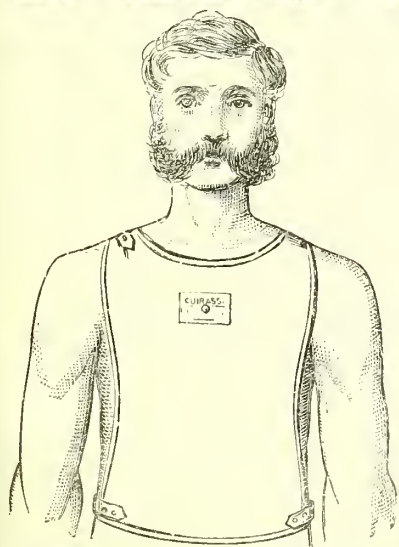
# CHEST

PRIZE MEDAL,

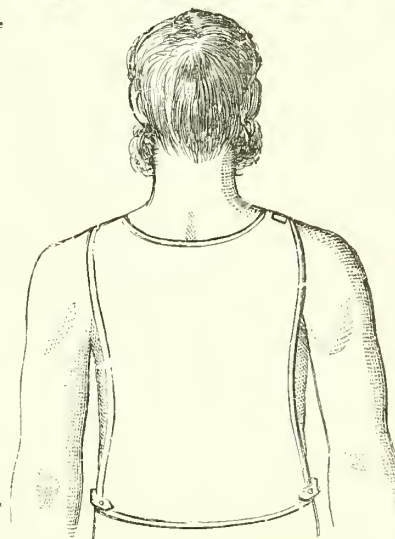


SYDNEY, 1879.

# PROTECTORS.



LYNCH'S  
"CUIRASS."  
REGISTERED.



Subjoined we have pleasure to hand Prices for approaching season,  
soliciting early orders.

DOUBLE.

**CUIRASS, Scarlet or White Felt—**

No. 1, 24/-; No. 2, 30/-; No. 3, 36/-; No. 4, 43/-; No. 5, 54/- per dozen.

**DREADNOUGHT, Scarlet or White Felt—**

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**GENTLEMEN'S, Scarlet or White Felt—**

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*Discount: 10 per cent. Monthly, 5 per cent. Half-yearly account.*

**SPECIAL QUOTATION FOR SIX DOZEN AND UPWARDS.**

## LYNCH & CO.,

ALDERSGATE STREET, LONDON, E.C.



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## COWAN'S <sup>NEW</sup> POCKET

FOR

### BABY'S FEEDING BOTTLE

(REGISTERED).

4s., 8s., and 12s. per dozen.

Retail, 6d., 1s., and 1s. 6d. each.

A Photograph of a baby, on each box, with a Pocket on.

*Can be had of all Wholesale Chemists and Druggists.*

Cowan's Respirators, 1s. Knee Shield with Joints, 4s. 6d. Elbow Shield with Joints, 4s. 6d. Ladies' Breast Shield, right or left, 4s. 6d. Boy's Shield for sores on leg, 2s. 6d. Men's, 4s. Shields of all descriptions made to order on shortest of notice.

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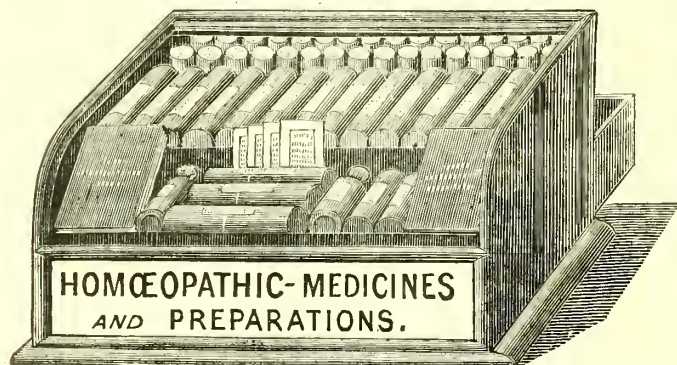
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# KEENE & ASHWELL'S COMPANION TO THE HOMŒOPATHIC PHARMACOPŒIA.

*Price 3/6 Post Free to any part of the World on receipt of Remittance.*

This work gives all the remedies of the Homœopathic Pharmacopœia, with a host of new ones. It gives all the processes of the official work, so that it is all the Chemist will require. Some of the tests are omitted, as these are given in the British Pharmacopœia, and are really unnecessary.



OUR

**£4 4s. 0d.**

AGENTS' SHOW CASE.

CONTENTS REALISE

**£8 8s. 0d.**

*Price Lists of Medicines put up for Sale  
and in Bulk on application.*

**KEENE & ASHWELL,**  
MANUFACTURERS OF HOMŒOPATHIC MEDICINES,  
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One „ 5, 8, 10, 12, 14,	Less 10 %	0 4 8
15, 17, 18, 20,		
21, 22		2 2 0
Showing a PROFIT of £2 3 6		

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17, 18, 21, 22		
One „ 7, 9, 11, 13, 14,		5 6 4
15, 16, 20, 23, 25		
Showing a PROFIT of £5 12 2		

No.	DESCRIPTION.	SHAPE.	RETAIL PRICE.	WHOLESALE PRICE.
1.	The Shilling Respirator ..	Oval, each	1 0	0 8 0
2.	Metallic, Cotton Velvet Pads ..	„	2 0	0 12 0
3.	„ Silk Velvet Pads ..	„	2 6	0 18 0
3A.	Silver-plated Wire, Silk Velvet Pads ..	„	2 6	0 18 0
4.	Silver-plated Wire, Silk Velvet Pads ..	„	3 0	1 1 0
5.	Silver-plated Wire, Silk Velvet Pads ..	Square	4 0	1 8 0
5A.	„ „ Without Ends ..	„	3 6	1 4 0
6.	Silver-plated Wire, Elastic Silk Mouthpiece ..	„	4 0	1 10 0
7.	Gold-plated „ Silk Velvet Pads ..	„	7 6	2 8 0
8.	Threefold Silver-plated, Velvet Pads and Silk Mouthpiece ..	„	6 0	1 16 0
9.	Gold-plated „ „ ..	„	7 6	2 8 0
10.	The Aerial Respirator, Silver-plated, Ladies' ..	Oval	5 0	1 10 0
11.	„ „ Gold-plated, „ ..	„	6 0	2 2 0
12.	„ „ Silver-plated, Gents' ..	„	6 0	1 16 0
13.	„ „ Gold-plated, „ ..	„	7 6	2 8 0
(The Aerials may be had covered with black or drab.)				
14.	Gold-plated Wire, full size ..	„	7 6	2 8 0
15.	Gold Plates, full size ..	„	7 6	2 8 0
16.	Orinasal, Silver-plated Wire ..	Square	4 0	1 10 0
17.	Ladies' Miniature, Silver-plated ..	Oval	5 0	1 10 0
18.	„ „ Gold-plated ..	„	6 0	2 2 0
19.	The Manifold Respirator, of variable power, containing six Metallic Plates, four of which are movable, Gold-plated ..	Square	10 6	3 12 0
20.	Ditto ditto ditto ..	Oval	10 6	3 12 0
(The Manifold Respirator may be worn with or without plates A. and B.)				
21.	Gents' full size, Silver-plated ..	„	5 0	1 10 0
22.	„ „ Gold-plated ..	„	6 0	2 2 0
23.	The Cotton-wool Respirator, Silver-plated ..	Orinasal	5 0	1 16 0
24.	„ „ Gold-plated ..	„	8 6	3 0 0
25.	„ „ „ ..	Oval	5 0	1 16 0
(As recommended by Professor Tyndall)				
Nos. 1, 2, and 3 ..				Contain 1 Metallic Plate.
„ 4, 5, 6, 10, 11, 16, 17, 18, 21, 22, 23, 24, and 25 ..				„ 2 „ „
„ 7, 8, 9, 12, 13, 14, and 15 ..				„ 3 „ „
„ 19 and 20 ..				„ 6 „ „

## CHEST PROTECTORS.

(FULL STANDARD SIZES, BEST QUALITY, SCARLET, OR WHITE FELT.)



Fig. 1.

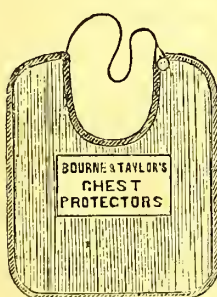


Fig. 2.

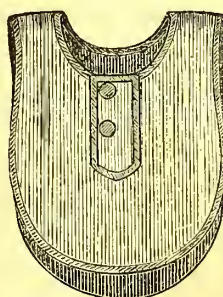


Fig. 3.

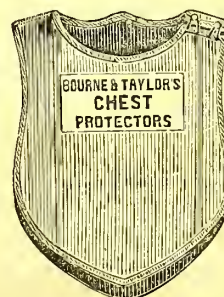


Fig. 4.

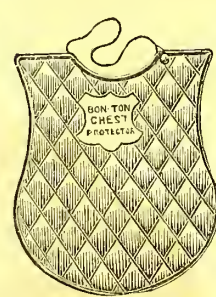


Fig. 5.

Fig. 1.—Red or White Felt ..	No. 0, 6/	1, 7/6	2, 9/6	3, 11/6	4, 14/	5, 20/ per doz.
„ —Chamois Skin, Lined with Flannel..	No. 0, 6/	1, 8/	2, 11/6	3, 13/6	4, 16/	5, 20/ „
Fig. 2.—Ladies' Shape, Red or White Felt—(B. & T.'s Pattern)						
No. 1. Size 11 x 11 ..						16/ „
„ 2. „ 12 x 12 ..						20/ „
„ 3. „ 13 x 13 ..						24/ „
Fig. 3.—Vests for the Chest and Back, Red or White Felt						
Fig. 4.—Lung Preservers, Red or White Felt. (These are cut out of one piece, and have no seam on the shoulder)	No. 1, 17/	2, 22/6	3, 28/	4, 34/	5, 45/	„
„ —Lung Preservers, Chamois Skin, Lined with Flannel ..	No. 1, 20/	2, 28/	3, 34/	4, 39/	5, 48/	„
Fig. 5.—The "Bon Ton," Quilted Satin, Very Handsome	No. 1, 18/	2, 21/	3, 24/			„

Pure White Polish Rabbit Skin. We have received a large consignment of these goods of special fine quality.

Prices 18/ and 21/ per dozen.

Rabbit Skins, per dozen, 12/, 15/. Hare Skins, per dozen, 15/, 18/, 21/. Australian Opossum, per dozen, 18/, 21/.

Each Dozen Chest Protectors put up in a Glass Top Show Box.

# NON-IRRITANT IODINE for INTERNAL USE.

## GARDNER'S UNALTERABLE SYRUP OF HYDRIODIC ACID

*SYRUPUS ACIDI HYDRIODICI (GARDNER).*

In this preparation the Hydriodic Acid is perfectly protected against decomposition, and is therefore always available for medical use—a result never before attained.

Solution of Hydriodic Acid was long since recommended for internal use. Dr. BUCHANAN, in the *London Medical Gazette*, Vol. XVIII., p. 517, published a formula for its extempore preparation, and states that the solution possesses all the therapeutic powers of Iodine without its irritating properties. But the solution always decomposed within a few hours after its preparation, and was therefore rarely, if ever, in a fit condition for internal administration.

The decomposition is caused by the disengagement of Hydrogen; this sets free its equivalent of Iodine, which colours the remaining acid red, and renders it too irritant for internal medication.

Simple mixtures of Hydriodic Acid and Syrup do not keep.

When not decomposed, Hydriodic Acid is of a light-yellowish colour, is perfectly non-irritant, gratefully acid to the taste, and rendered still more acceptable if combined, as in this preparation, with sugar.

In chemical composition it consists of one equivalent each of Iodine and Hydrogen (HI). As the equivalent of Iodine is 127, and that of Hydrogen 1, it follows that the proportion of Hydrogen present, as compared to Iodine, is less than 1 per cent. (78-100 of 1 per cent.). The Acid is therefore nearly pure Iodine.

The combination renders Iodine more assimilable, and medicinally more active, whilst depriving it of its objectionable irritant properties, and changing it from a most disagreeable to one of the pleasantest of remedies.

The Syrup has been remarkably useful in Asthma, Chronic Bronchitis, and Hay Fever. (See papers by J. P. OLIVER, M.D., Boston, *Medical and Surgical Journal*, March 4th, 1880, and by W. GILL WYLIE, M.D., New York, *Medical Record*, May 10th, 1879.) While it has been found specially useful in these diseases, it is applicable to all that large class of affections in which the use of Iodine is indicated, as in chronic and subacute Catarrhal Affections, Goitre, Adipose Tumours, Syphilis, &c.; also in chronic Malarial Poisoning.

Its effect upon mucous surfaces is more marked than that of other forms of Iodine, while it is effective in smaller relative proportions.

It is as palatable as Lemon Syrup.

It is so free from irritant action that it may be given to the youngest infants

Its efficacy in Syphilis has been demonstrated.

One ounce of this Syrup contains forty minims of dilute Hydriodic Acid, representing 6.66 grains of Iodine, which correspond to 8.69 grains of Iodide of Potassium: it is, however, more active than Iodide of Potassium, and should be given in smaller relative doses.

The Dose of this Syrup is from one to three teaspoonfuls in twice the bulk of water, three or four times a day.

### OPINIONS OF THE MEDICAL PRESS.

The *LANCET*, March 25, 1882, writes:—Hydriodic Acid, containing as it does more than 99 per cent. of iodine, is an excellent form in which to administer the element. Gardner's solution is in all respects admirable. Not a trace of free iodine can be detected in it, and as to taste, it can hardly be distinguished from lemon syrup. In addition to the ordinary applications of iodine, it is described as useful in asthma, chronic bronchitis, and hay fever.

The *BRITISH MEDICAL JOURNAL*, April 1, 1882, writes:—Although little is said about hydriodic acid in our text books of materia medica, it is undoubtedly a valuable drug, and affords an admir-

able mode of administering iodine, when it is desired to obtain its constitutional effects. It has of late been employed with considerable success in the treatment of asthma, bronchitis, and hay fever. It has been but little used in medicine, from the difficulty experienced in obtaining it in a stable form. This difficulty has at length been overcome; and we have received from Messrs. Allen & Hanburys a specimen of Gardner's syrup of hydriodic acid, which is all that could be desired. It is of a light straw colour, is free from smell, and has a sweet styptic taste, and is by no means disagreeable. The dose is from two to three teaspoonfuls in water, three times a day.

In 1-lb. Bottles, at 5s. 4d. each, or 63s. per dozen.

Prepared by ROBERT W. GARDNER, Pharmaceutical Chemist, 170 William Street, New York.

Sole Wholesale Agents—W. H. SCHIEFFELIN & CO., New York.

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# ALLEN & HANBURY'S,

PLOUGH COURT, LOMBARD STREET, LONDON.



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**ZINC OXIDE** H7.



# SOLUBLE & PERMANENT SUGAR-COATED PILLS.

No Pin-Holes. No Secret Coating. Purest Drugs.

*Award of Merit, International Medical and Sanitary Exhibition, 1881.*

SIX GRAND WORLD'S FAIR MEDALS. FIRST CENTENNIAL PRIZE OVER ALL COMPETITION.

The manufacture of official and other ready-made Pills for Physicians' prescriptions has been, on our part confined to those coated with sugar and round in shape; because an experience of more than a quarter of a century serves to convince us that sugar is the only proper material with which to coat a pill; in confirmation of which we append the following reason :-

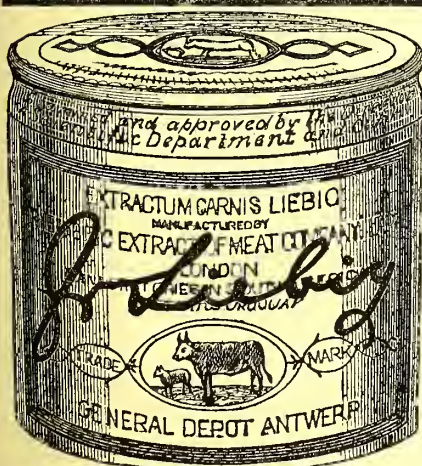
- 1.—Because sugar is more soluble than gelatine, glue, chalk, or talc, of which the two former are the same in substance and properties. . . . . "Sugar-coated pills are more soluble than gelatine-coated or compressed pills."—*Prof. Remington's Paper read before the American Pharmaceutical Association, Boston, 1875.*
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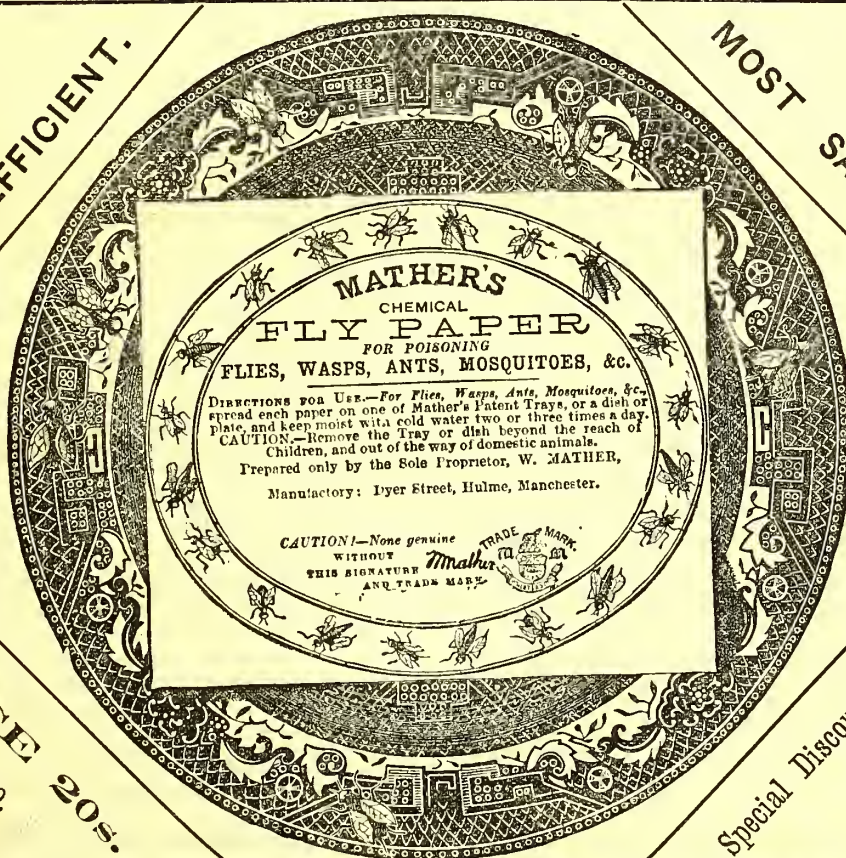
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**A S ASSISTANT**; disengaged October 1; good country business; passed Preliminary; 6 years' experience; aged 22; height, 5 foot 8 inches; excellent references. W. E. Bolton, St. Mary's Ahhey, Bedford.

**A S ASSISTANT** (outdoor), in London, Camden Town preferred; aged 21½; height, 6 feet; passed Preliminary; 4½ years' experience; good references. J. B. N., 75 High Street, Stourbridge.

**A S ASSISTANT**, in good Dispensing Business; aged 21½; 5½ years' good experience; good references; disengaged. J. C. Lloyd, 15 Chesham Road, Clapham, S.W.

**DISPENSER**, Manager of Branch, or outdoor Assistant, Wholesale or Retail; long experience; good references; town or suburbs. J., 10 Coln Villas, Mill Hill Road, Acton.

**RE-ENGAGEMENT** as Manager or Assistant, General, Furnishing, and Builders; used to workmen; 12 years' experience in London and country; abroad not objected to. Address, 218/15, Office of THE CHEMIST AND DRUGGIST, 44A Cannon Street.

**A YOUNG GERMAN ASSISTANT**, who speaks French fluently, and a little English, would like to find a place in England; he is thoroughly acquainted with Pharmacy, and has had experience of some of the first Houses in Paris. Address E., Office of THE CHEMIST AND DRUGGIST, 44A Cannon Street.

## APPRENTICESHIPS.

**MR. BANBURY**, Chemist, Dursley, has a vacancy for a well-educated Youth as Apprentice; unusual opportunities for acquiring a thorough knowledge of the profession; terms moderate.

**TO PARENTS AND GUARDIANS**.—R. H. Treweeks, Chemist and Book-seller, Pembroke, is in want of an Apprentice; terms on application, and references exchanged.

**A PPRENTICE**.—A Chemist wishes to place his son, who has passed Preliminary and is 16 years of age, in a good house; London or suburbs preferred; premium moderate. Letters addressed A. B. C., Office of THE CHEMIST AND DRUGGIST, 44A Cannon Street.

## MISCELLANEOUS.

**TO THE AERATED WATER TRADE**.—Bottlers and others wanting Situations, Employers requiring Bottlers, &c., should write to N. G. Wilcocks, Back Street, Bath. No charge whatever.

**MECHANICAL DENTISTRY**.—Mr. Roberts executes work in Vulcanite on exceptionally low terms. 3 Springfield Terrace, Willesden Green, N.W.

**FOR IMMEDIATE SALE**.—Manloves' 42-inch Hydro Extractor, Hydraulic Press, and quantity other articles useful to manufacturing chemists and others. Liquidators, 110 Cannon Street, E.C.

**TO ALMANAC PUBLISHERS**.—Publishers of Almanacs requiring Advertisements are requested to send a Sample Copy, stating circulation and lowest terms for page, half-page, and quarter-page advertisements, to B. S., care of Newberry, 1 King Edward Street, London, E.C.

**ST. SAVIOUR'S UNION, SURREY**.—Appointment of Dispenser.—A Licentiate of the Apothecaries' Company of London, or one who has been registered under the Pharmacy Act, 1868, or some other authority of law, is REQUIRED to discharge the duties of DISPENSER at the Northern Dispensary, 55 Blackman Street, Borough, S.E., at a salary of £60 per annum and 12s. weekly in lieu of rations. The person appointed will also be provided with furnished apartments, gas, coal, and washing. Full particulars of the duties, or any other information required, may be obtained on personal application to the undersigned. Applications must be made on forms obtainable at my offices, which must be returned before noon on Thursday, September 21 next. Canvassing the Guardians is strictly prohibited, and will disqualify any candidate.

By order,  
Clerk's Offices, John Street West, Blackfriars Road, S.E., September 8, 1882.

HOWARD C. JONES.



1882.

SIXTEENTH SEASON.

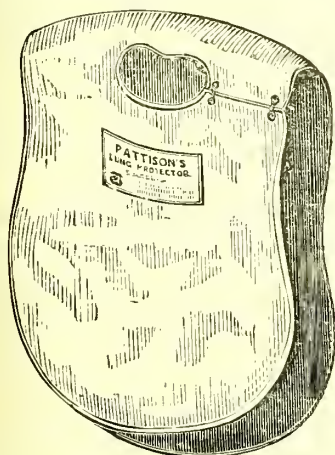
REGISTERED  
LUNG  
PROTECTOR  
TRADE MARK

# THE LUNG PROTECTOR

(REGISTERED).

*"An Article of Acknowledged Excellence."*

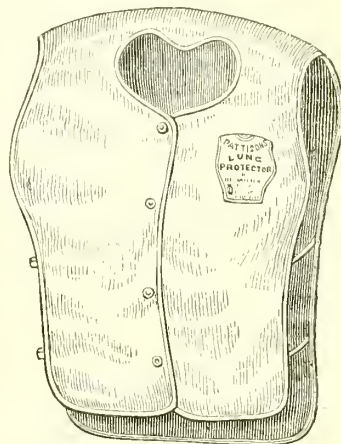
The "LUNG PROTECTOR" continues to be made only from the same Fine Soft Wool which has always been used since its introduction 16 years ago. Chemists are cautioned against the mendacious assertions of unscrupulous persons who push upon them coarse and inferior imitations, the sale of which can only lead to ultimate loss of trade.



**THE LUNG PROTECTOR.**  
ORIGINAL PATTERN.



**LUNG PROTECTOR.**  
THE AMERICAN.



**LUNG PROTECTOR.**  
THE CANADIAN.

**PRICES :**

	No. 0	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	
Original Pattern, Seven sizes ... ..	14/-	18/-	26/-	34/-	42/-	52/-	60/-	per doz.
The American, Six sizes ... ..	20/-	28/-	38/-	44/-	54/-	62/-		"
The Canadian, Six sizes ... ..	22/-	30/-	40/-	50/-	60/-	70/-		"

## FELT CHEST PROTECTORS.

	No. 00	No. 0	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	
Prices... ..	4/-	6/-	8/-	10/-	12/-	16/-	20/-	24/-	per doz.

*All in Scarlet and White, and made in same Wool as the "Lung Protector."*

**Terms :** All Wholesale Houses either allow a large Discount for Cash, or quote the goods at Reduced Net Cash prices.

**FELT CHEST PROTECTORS, C QUALITY**, single and double, each in five sizes.

At lower prices than above, and equal to **BEST** of other makers, but are **NOT** recommended.

# GEORGE PATTISON,

INVENTOR AND MANUFACTURER,

139 ST. JOHN STREET ROAD, LONDON, E.C.

# Literary and Scientific.

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Consulting Physician (late Senior Physician) to the Royal Hospital for Diseases of the Chest, &c.

**ON Loss of Weight, Blood-Spitting, and LUNG DISEASE.** To which is now added Part VI., on the **FUNCTIONS and DISORDERS of the LIVER**, and their Management in accordance with the Results of Modern Discovery. Second Edition. Coloured Plates.

**Affections of the Heart and in its Neighbourhood.** Cases, Aphorisms, and Commentaries. Illustrated. Second issue.

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**Report on the Use of Pancreatic EMULSION and PANCREATINE,** as first introduced into Medical Practice by Dr. Dobell in 1863.

A descriptive Catalogue of Dr. Dobell's Works, with Prices, Lists of Illustrations, Opinions of the Press, and the Table of Contents of each volume, on application at **LEWIS'S LIBRARY**, 136 Gower St., London, W.C.

## ATTFIELD'S CHEMISTRY.

General, Medical, Pharmaceutical.

**NINTH EDITION, 15s.**

For Study. For Reference.

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Now Ready. Price 4s.

## INCE'S LATIN GRAMMAR.

*THE LATIN GRAMMAR OF PHARMACY,*

For the use of Medical and Pharmaceutical Students, with an Essay on the Reading of Latin Prescriptions. By **JOSEPH INCE, F.C.S., F.L.S., A.K.C. Lond.,** formerly Examiner and Member of Council of the Pharmaceutical Society of Great Britain.

London: **BAILLIERE, TINDALL & COX,** 20 King William Street, Strand.

**3d. In the Shilling Discount for Cash with Order.**

Books sent to any of the Wholesale Houses for enclosure.

**HENRY KIMPTON,** Chemical and Scientific Bookseller and Publisher, 82 High Holborn, London, W.C.

*New Catalogue One Stamp. To the Pharmaceutical Society of Great Britain.*

FOURTEENTH EDITION.

# MATERIA MEDICA EXAMINATIONS.

**BRITISH PHARMACOPŒIA, 1867,**

Further enlarged; and there is now included, in each case, a copy of "The Organic Materia Medica," by **W. SOUTHALL, F.L.S.**

*The Original Collection of Specimens of the Organic Materia Medica of the British Pharmacopœia, for the use of*  
**MEDICAL AND PHARMACEUTICAL STUDENTS.**

These Collections comprise all that a Student requires to assist him in preparing for his Materia Medica Examination. Each Collection consists of about 150 carefully selected and characteristic specimens of the Roots, Barks, Flowers, Fruits, Leaves, Resins, Gums, &c., of the British Pharmacopœia, 1867. Each specimen bears a label containing a description of the source from which the article is derived, its natural order, characters and tests, dose, and the names of the Pharmacopœial Preparations into the composition of which it enters. The Student is thus enabled, in the most effective manner, to study Materia Medica with the actual substance as well as the descriptive text before him.

**THE PRICE OF THE COLLECTION, IN A NEAT WOODEN BOX, 30s. EACH.**

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## OPINIONS OF THE PRESS.

Favourable opinions have been received from the Editors of the **PHARMACEUTICAL JOURNAL**, **CHEMIST AND DRUGGIST**, **MEDICAL TIMES AND GAZETTE**, and **BRITISH MEDICAL JOURNAL**.

*We have received large numbers of unsolicited letters, expressing warm approval of these collections, both from Students and Professors.*

Besides the "Students' Set" we supply larger Collections for the use of Professors at Universities, Lecturers, &c.

We have supplied these large Sets to the Professors at Oxford and Cambridge Universities, also to the King and Queen's College, Ireland, &c.

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# THE SCHOOL OF PHARMACY

OF THE

## Pharmaceutical Society of Great Britain.

**FORTY-FIRST SESSION, 1882-83.**

*The Session will commence on Monday, October 2nd, 1882, as follows:—*

**CHEMISTRY AND PHARMACY** .. .. . Professor REDWOOD, Ph.D., F.I.C., &c.  
On Monday, Tuesday, and Wednesday Mornings, at 9 o'clock.  
**BOTANY AND MATERIA MEDICA** .. .. . Professor BENTLEY, M.R.C.S., F.L.S., &c.  
On Thursday, Friday, and Saturday Mornings, at 9 o'clock.  
**PRACTICAL CHEMISTRY** .. .. . Professor ATTFIELD, Ph.D., F.R.S., &c.  
Daily at 10 o'clock, in the Laboratory.

At 8 p.m. on Wednesday, October 4, the School Prizes will be distributed, and an Address to the Students be delivered by Joseph Ince, A.K.C., F.C.S., F.L.S. All Students and Friends, ladies as well as gentlemen, are invited to be present.

### THE LECTURES ON CHEMISTRY AND PHARMACY

Will commence on Monday, October 2nd, 1882.

They will comprise:—

1. An exposition of the physical forces involved in chemical and pharmaceutical operations and changes.
2. The chemistry of inorganic bodies, including a description of the elements and their more important inorganic compounds, especially those used in medicine.
3. The chemistry of organic compounds, with a description of such as have important applications in the arts and in medicine.

The subjects will be fully illustrated with experiments, diagrams, and specimens; and will be followed by an examination of the class on those subjects which have been previously treated of by the Professor.

With the view of connecting the lecture teaching with the instruction given to the practical class in the laboratory, and of enabling the Professor to increase the number of his experimental illustrations, the Demonstrator of Practical Chemistry will assist at these lectures and at the examinations.

Instruction in Practical Dispensing will be provided for those Students who have previously had but slight means afforded them of becoming skilled in such operations.

#### Fees.

	£	s.	d.
One Course (five months) .. .. .	3	3	0
An Entire Session (two Courses) .. .. .	4	4	0
Perpetual Admission .. .. .	5	5	0

### THE LECTURES ON BOTANY & MATERIA MEDICA

Will commence on Friday, October 6th, 1881.

They will comprise:—

1. Structural and Physiological Botany, which is especially adapted to meet the requirements of pharmaceutical students.
2. Organic Materia Medica, comprising the medical substances obtained from the organic kingdom, which are considered in the order of the natural historical relations of the organisms which produce them.
3. Systematic and Practical Botany, which is taught during the summer months in the Royal Botanic Society's Gardens, Regent's Park.

All the Lectures will be very fully illustrated by every means to which recourse can be had, including fresh, dried, and preserved portions of plants, together with their products and secretions; and by an extensive series of drawings, diagrams, and preparations, as well as by experiments and microscopical preparations.

In order to test the proficiency of the pupils, and to bring them into more intimate intercourse with the Professors, a *vis-à-vis* examination is held after each Lecture. It is hoped that all pupils will attend these examinations.

#### Fees.

	£	s.	d.
Botany and Materia Medica, one Course (five months) .. .. .	2	2	0
An Entire Session (two Courses), including Systematic and Practical Botany .. .. .	3	3	0
Systematic and Practical Botany, separately .. .. .	1	1	0
Perpetual Admission to all the Courses .. .. .	4	4	0

### INSTRUCTION IN PRACTICAL CHEMISTRY,

Conducted in the Laboratory by the Professor and Demonstrators, will commence on Monday, October 2, 1882.

The Laboratories are open from ten o'clock in the morning until five in the afternoon daily, except on Saturdays, when they are closed at two o'clock. They are fitted up with every convenience for the study of the principles of Chemistry by personal experiment. They are specially designed for the student of Pharmacy, but are equally well adapted for the acquirement of a knowledge of Chemistry in its application to Medicine, Manufactures, Analysis, or Original Research. There is no general class for simultaneous instruction, each Student following an independent course of study always determined by his previous knowledge; Pupils can therefore enter for any period at any date. A complete Senior course, including the higher branches of Quantitative Analysis, occupies ten months, and dates from the day of entry to that day twelvemonth. A complete Junior Course occupies five months.

With a view of testing and maintaining the progress of Students the Professor holds examinations frequently. He invites all pupils to attend these classes.

#### Fees.

Hours of Study.	One Month	Two Months.	Three Months.	Five Months	Ten Months.
10.0 to 5.0 daily } (Sat. 10.0 to 2.0)	£ s. d. 4 4 0	£ s. d. 7 7 0	£ s. d. 10 10 0	£ s. d. 15 15 0	£ s. d. 26 5 0
Three days weekly } or 3 hours daily	2 17 6	4 17 6	6 16 6	10 10 0	17 17 0
Two days weekly } or 2 hours daily	2 2 0	3 10 0	4 17 6	7 7 0	12 12 0

### SCHOOL OF PHARMACY PRIZES.

PRESENTED BY THE COUNCIL.

At the end of each of the five months' Courses of Lectures on CHEMISTRY and PHARMACY, and BOTANY and MATERIA MEDICA, a Bronze Medal and Certificates of Merit, and at the close of the Session (ten months) a Silver Medal and Certificates of Honour and Merit, will be offered for competition.

In the Class of PRACTICAL CHEMISTRY, one Silver Medal, two Bronze Medals and Certificates of Honour and Merit, will be competed for at the end of the Session.

### CERTIFICATES OF ATTENDANCE.

Certificates of Attendance in the Classes of Chemistry and Pharmacy, Botany and Materia Medica, and Practical Chemistry, are given by the Professors, under certain conditions, to all Students.

### LIBRARY, READING-ROOM AND MUSEUMS.

These are open to all Students connected with the Society. Other Students in the School may obtain orders for admission on application to the Secretary.

*Application for admission to the School, for Prospectuses, or for further information, may be made to the Professors or their Assistants in the Lecture Room or Laboratories, 17 Bloomsbury Square, London, W.C.*

# PHARMACEUTICAL DEPARTMENT FEES:

## FRELIMINARY.

One Month .....£2 2s.  
Until Qualified.....£5 5s.

## MINOR OR MAJOR.

One Month .....£3 3s.  
Three Months .....£7 7s.  
Until Qualified ...£10 10s.

MINOR AND MAJOR :  
£15 15s.

Director... .. G. S. V. WILLS, F.L.S., F.R.M.S.

The Eleventh Session commenced on Friday, September 1st.

The Pharmaceutical portion of the Instruction in this College is equal to that of any other School.

*The success which always attends Students presenting themselves from this School furnishes a sufficient test of the thoroughness of the education imparted.*

The subjoined Pass List\* speaks for itself, and is a surer proof than flattering advertisements of the success of the Students of the Westminster College and the excellence of the instruction thereat imparted.

## \* PASS LIST FOR THE SESSION 1881-82.

26 Students entered this School for the MAJOR COURSE. 18 presented themselves for examination.

The following 10 passed:—Messrs. Harrison, Humphries, Bush, Chabôt, Hollingsworth, Harrop, Horrell, Holmes, F., Murray, and Wheatley.

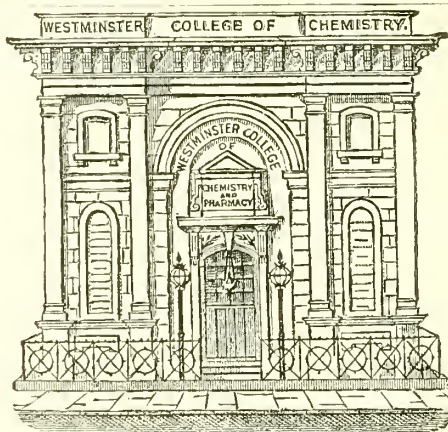
As an example of the unparalleled success attending the Westminster College Students in the Minor Examination we tabulate the result of each examination.

October.		December.		February.		April.		June.		July.	
FROM	FROM	FROM	FROM	FROM	FROM	FROM	FROM	FROM	FROM	FROM	FROM
West. Col.	Other Sources.	West. Col.	Other Sources.	West. Col.	Other Sources.	West. Col.	Other Sources.	West. Col.	West. Col.	West. Col.	Other Sources.
Messrs.	Messrs.	Messrs.	Messrs.	Messrs.	Messrs.	Messrs.	Messrs.	Messrs.	Messrs.	Messrs.	Messrs.
Baxter	Atkinson	Adler	Broots	Benson	Bright	Pall	Ball	Arkle	Bowering	Allen	
Bayley	Brooker	Bearpark	Brown	Batterworth	Damant	Davies	Birkbeck	Coates	Cave	Dillon	
Buckley	Buck	Coslett	Caldcott	Dearnley	Dowty	Dattou	Blewett	Coombs	Comer	Evans	
Budden	Chipchase	Crossley	Chesterfield	Dunn	Elston	Eddy	Brunton	Elton	Cullwick	Greenall	
Burchell	Cleland	Cutts	Dampney	Evans	Fotheringham	Emerson	Burton	H II	Daniel	Hall	
Caton	Davies	Evans	Dix	Freeman	Foulston	Farthing	Clare	Humphries	Eley	Hanson	
Chubb	Davies	Evans	Dolbear	Hadfield	Gilbert	Graham	Davis	Ricketts	Evans	Harston	
Cox	Day	Forth	Duckett	Healey	Howard	Littleboy	Drew	Spencer	Foggitt	Hodgson	
Elliott	Eceles	Hart	Fisher	Oldfield	Jones	Longstaff	Ellis	Thompson	Frost	Hornby	
Graves	Feden	Heale	Jackson	Orange	Lockwood	Odham	Field	9	Gaskin	Meadows	
Harrison	Fry	Hickes	Johnson	Ray	Marchall	Pitts	Forster		Hankinson	Miller	
Harrop	Hetherington	Jones	Levet	Robinson	Mason	Quibll	Glew		Hewlett	Miss Mitten	
Holliday	Hill	Hopkinson	Lloyd	Silvers	Matterson	Radford	Hayward		Hickson	Pearson	
Hollingsworth	Leach	Machin	Lloyd	Stephenson	Richards	Radcliffe	Heald		Innes	Ransom	
Holmes	Li saman	Mainprize	Rouw		Short	Randall	Herbert		Loam	Thisleton	
Hughes	McDermott	Mitchell	Shields		Smith	Shackleton	Job		Longtoft	Thomas	
Jones	Maitland	Nathan	Simpson		Stephenson	Summers	Jones		Mann	Townsend	
Kelly	Milford	Purvis	Smith		Wakelin	Swadling	Legg		Nichol	Tyson	
Kennerley	Mitchell	Rees	Steel		Wigg	Walker	Oldershaw		Noble	Waymouth	
Loyg	Parker	Shuffrey	Tozer			Whitney	Reade		Norburn	Wheley	
Newboud	Pars	Smith, L.	Ward, J.			Williams	Roberts		Northern	Williams	
Penberthy	Pegg	Stenrett	Ward, W.			Wilson	Roberts		Parker	Wood	
Phillips	Roberts	Taylor	West			Wood	Savage		Pellew	Thomas, J. A.	
Swift	Sanderson	Trickey	White				Stephens		Pickering		
Taylor	Saunders	Webb	Wilson				Smith		Pinder		
Thomas	Shephard	Loxton	Wood				Taylor		Rodmell		
Thompson	Silk	Jones, R.					Taylor		Rowland		
Toxle	Thomson	Smith, J.					Tucker		Sargent		
Troton	Turney						Turnell		Shapcott		
Waterworth	Water						Wilde		Thomas		
Watson	Warman						Wilder		Warburton		
Weavers	Watts						Woolens		Weddle		
Wheatley	Wingrave						Wright		Wellburn		
Wilcock	Worsley								Wells		
	Wyatt								Worts		
35	35	28	26	14	10	23	33	8	35	23	

N.B.—From the above statement it will be seen that 144 passed the Minor Examination in London from the Westminster College, while only 144 passed from all other Sources.

For Revised Prospectus and further particulars, apply personally or by letter, to Messrs. WILLS & WOOTTON, Westminster College, Trinity Square, LONDON, S.E.

# WESTMINSTER COLLEGE of CHEMISTRY



# FOOD AND DRUG DEPARTMENT FEES:

One Month .....£5 5s.  
Three Months.....£10 10s.

For an entire session  
(Twelve Months), com-  
mencing from the date  
of entrance.....£21

MICROSCOPICAL  
and CHEMICAL  
ANALYSES for the  
Trade.

N.B.—144 passed Minor Examination in London from the Westminster College, while only 144 passed from all the other sources.

N.B.—144 passed Minor Examination in London from the Westminster College, while only 144 passed from all the other sources.



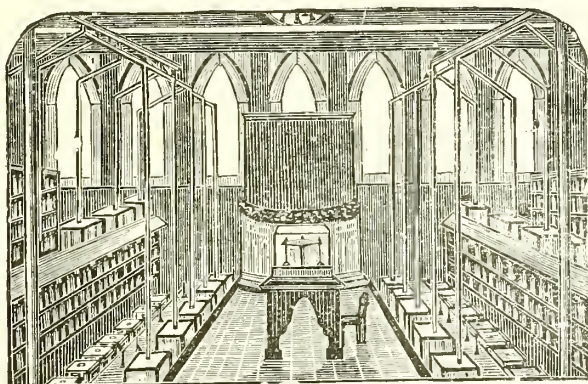
*"SYSTEMA OMNIA VINCIT."*

# SOUTH LONDON SCHOOL OF PHARMACY.

Managing Director,

**DR. MUTER, M.A.,**

F.C.S., F.I.C., &c.



SCHOOL BUILDING

AND

LABORATORIES,

325 Kennington

Road, S.E.

FOURTEENTH SESSION, 1882-3.

## Public Course.

The regular session work will begin on September 15th, when the following Courses of Instruction will be commenced:—

<b>Theoretical Chemistry</b>	-	<b>60 Lectures,</b>
<b>Botany</b>	- - -	<b>30 Lectures,</b>
<b>Materia Medica</b>	- - -	<b>30 Lectures,</b>

with Daily Classes in Latin, Pharmacy, and Practical Dispensing.

The Laboratory is open for Practical Chemistry from 10 till 1 and 2 till 5. The Junior Course includes the manufacture of chemicals, and qualitative analysis; and the Senior extends to quantitative (both volumetric and gravimetric) and ultimate organic analysis. All chemicals and expensive apparatus are supplied free of charge.

*FEES—Perpetual Fee to all Lectures, £4 4s. Junior Laboratory, £2 2s. per month.*

## Prizes and Certificates.

These are competed for at Examinations held by visiting examiners at the conclusion of each course of lectures. Certificates of Attendance on the lectures are issued to all who attend regularly.

During the past year only one Major candidate and five Minor candidates for the South London School of Pharmacy failed to pass the examinations at Bloomsbury Square, thus proving the efficiency of the School.

For any further particulars apply to

**W. BAXTER, Secretary.**

## ST. MARY'S HOSPITAL MEDICAL SCHOOL, PADDINGTON, W.

The INTRODUCTORY LECTURE by Dr. CHAMBERS, Monday,  
October 2nd, 1882, at 3.30 P.M.

### MEDICAL OFFICERS AND LECTURERS.

Consulting Officers—Dr. Chambers, Sir James Alkerson, M.D., F.R.S.,  
Mr. Lane, Mr. Spencer Smith, Mr. J. R. Lane, Mr. White Cooper.  
Physicians—Dr. Handfield Jones, F.R.S., Dr. Sieveking, Dr. Broadbent.  
Physicians in Charge of Out-patients—Dr. Cheadle, Dr. Shepherd, Dr. Lees.  
Surgeons—Mr. Haynes Walton, Mr. Norton, Mr. Owen.  
Surgeons in Charge of Out-patients—Mr. Page, Mr. Fye, Mr. A. J. Pepper.  
Physician-Accoucheur—Dr. Alired Meadows.  
Physician-Accoucheur in charge of Out-patients—Dr. Wiltshire.  
Ophthalmic Surgeon—Mr. Anderson Critchett.  
Aural Surgeon—Mr. Field. Surgeon-Dentist—Mr. Hayward.  
Medical Tutor—Mr. Pepper.  
Other Lecturers—Dr. Wright, F.R.S., Dr. Randall, Mr. Mivart, F.R.S.,  
Rev. J. M. Crombie, Mr. Malcolm Morris.

The course of teaching at this School ensures careful and complete preparation for all the Examining Boards, the Public Services, and the higher University Examinations. Special instruction is given to Students preparing for the examinations of the University of London.

The MEDICAL TUTOR assists the Students in their Clinical Work and in preparing for the Final Examinations, so that the training of every individual Student is supervised. Ophthalmic, Aural, and Dental Surgery, Comparative Anatomy, Histology, and Pathology are carefully and systematically taught both by Lectures and Practical Demonstrations. There are also departments for the Diseases of Women and Children, of the Eye and Ear, of the Skin, and of the Throat.

SCHOLARSHIPS.—Two Scholarships of the value of £150 and £100. These Scholarships are awarded every year by open competition in Natural Science previous to entrance at the School. A Scholarship of £20 in Anatomy. A Scholarship of £40 in Pathology, carrying with it the appointment of Assistant Curator. These are awarded annually.

PRIZES.—Prizes are given in each class at the close of every Session.

APPOINTMENTS.—Four House Surgeoncies, each tenable for one year. A Resident Obstetric Assistantship, tenable for six months.

These Resident Medical Appointments are open to the Pupils without expense of any kind, and are equivalent to Four Scholarships of the annual value of £50.

For the Prospectus, apply to

A. B. SHEPHERD, M.D., Dean of the School.

## LONDON HOMOEOPATHIC HOSPITAL, Great Ormond Street, Bloomsbury.

Unendowed. Seventy Beds. Funds urgently needed. Trained Nurses sent out to attend private patients.

For further information apply to the Hospital. By order,

G. A. CROSS, Secretary.

## THE MIDDLESEX HOSPITAL

MEDICAL SCHOOL.—The WINTER SESSION will OPEN on MONDAY, OCTOBER 2nd, at Three P.M., with an Introductory Address by R. W. LYELL Esq., after which the Prizes awarded during the previous Winter and Summer Sessions will be distributed. The ANNUAL DINNER of the past and present Students and their Friends will take place the same evening at St. James's Hall.

The Hospital contains 310 Beds, and there are special departments for Cancer, Diseases of the Eye, Women, and Syphilis; also Out-patients' Departments for Diseases of Children, the Throat and Ear, and Skin.

### HOSPITAL STAFF AND LECTURERS.

Consulting Physicians—Dr. A. P. Stewart, Dr. Goodfellow, Dr. Henry Thompson, Dr. Greenhow, F.R.S.

Physicians—Dr. Cayley, Dr. Sydney Coupland, Dr. Douglas Powell.  
Assistant Physicians—Dr. David Finlay, Dr. J. K. Fowler, Dr. C. Y. Biss.

Obstetric Physician—Dr. J. Hall Davis.

Physician to the Skin Department—Dr. Robert Liveing.

Assistant Obstetric Physician—Dr. Arthur W. Edis.

Consulting Surgeons—Mr. Shaw, Mr. Nunn.

Surgeons—Mr. Hulke, F.R.S., Mr. George Lawson, Mr. Henry Morris.

Assistant Surgeons—Mr. Andrew Clark, Mr. Robert Lyell.

Ophthalmic Surgeon—Mr. Wm. Lenz.

Aural Surgeon—Mr. Arthur Hensman.

Consulting Dental Surgeon—Mr. Tomes, F.R.S.

Dental Surgeon—Mr. Turner.

Assistant Dental Surgeon—Mr. Storer Bennett.

Other Lecturers—Mr. B. T. Lowne, Dr. Thorowgood, Mr. Foster, Mr. Henry Case.

Two Entrance Scholarships, value £25 and £20 per annum, respectively, and a Science Scholarship value £50, will be competed for on September 29th and following days.

For further information, and for a Prospectus, apply to the Dean, or to the Resident Medical Officer at the Hospital.

## THE LONDON HOSPITAL AND MEDICAL COLLEGE.

### HOSPITAL STAFF.

CONSULTING PHYSICIANS—Dr. Herbert Davies, Dr. Ramskill.

CONSULTING SURGEON—Mr. Curling, F.R.S.

PHYSICIANS—Dr. Andrew Clark, Dr. Langdon Down, Dr. Hughlings Jackson, F.R.S., Dr. Sutton, Dr. Fenwick, Dr. Stephen Mackenzie, Dr. Sansom.

ASSISTANT PHYSICIANS—Dr. Charlewood Turner, Dr. Gilbert-Smith, Dr. Warner, Dr. Raife.

SURGEONS—Mr. Hutchinson, F.R.S., Mr. Couper, Mr. Rivington, Mr. Jas. Adams, Mr. Waren Tay, Mr. McCarthy.

ASSISTANT-SURGEONS—Mr. Reeves, Mr. Fredk. Treves, Mr. C. Mansell Moullin.

OBSTETRIC PHYSICIAN—Dr. Palfrey.

ASSISTANT OBSTETRIC PHYSICIAN—Dr. Herman.

OPHTHALMIC SURGEONS—Mr. James Adams, Mr. Waren Tay.

AURAL SURGEONS—Dr. Edw. Woakes and Mr. T. Mark Hovell.

SURGEON-DENTIST—Mr. Ashley W. Barrett.

### LECTURERS.

Medicine—Dr. Stephen Mackenzie

Surgery—Mr. Jas. Adams.

Operative Surgery—Mr. Jas. Adams.

Practical Surgery—Mr. Reeves.

Anatomy—Mr. Rivington.

Practical Anatomy—Mr. Fredk. Treves.

Physiology and Practical Histology—Mr. McCarthy.

Chemistry—Dr. C. Meymott Tidy.

Comparative Anatomy—Mr. C. Mansell Moullin.

Pathology—Dr. Sutton.

Midwifery—Dr. Palfrey.

Toxicology—

Botany—Dr. P. Warner.

Medical Jurisprudence—Dr. C. Meymott Tidy.

Materia Medica—Dr. Prosser James.

Diseases of the Eye—Mr. Jas. Adams.

Diseases of the Throat—Dr. Morell Mackenzie.

Diseases of the Ear—Dr. Edw. Woakes.

Anatomy and Pathology of the Teeth—Mr. Ashley W. Barrett.

The SESSION 1882-83 will commence on Monday, October 2nd, 1882, when an Introductory Address will be delivered, to be followed by a Conversazione to which all past and present Students are invited.

Fee for Lectures and Hospital Practice, 90 guineas in one sum, or 100 guineas by three instalments.

The Hospital contains nearly 800 beds. Number of In-patients during 1881 was 6,840; Out-patients, 58,307.

THE RESIDENT AND OTHER HOSPITAL APPOINTMENTS are free to full Students. The Resident Appointments consist of five House-Physiciancies, five House-Surgeoncies, and one Accoucheurship; also two Dresserships and two Maternity Assistantships.

TWO ENTRANCE SCIENCE SCHOLARSHIPS, value £60 and £40, and TWO BUXTON SCHOLARSHIPS, value £30 and £20, will be offered for competition at the end of September to new Students.

The Letheby Prize, value £30, for proficiency in Chemistry.

A Scholarship, value £20, in Human Anatomy and Physiology, to first year's Students.  
A Scholarship, value £25, in Anatomy, Physiology, and Chemistry, to second year's Students.

A Scholarship, value £20, in Clinical Medicine.

A Scholarship, value £20, in Clinical Surgery.

A Scholarship, value £20, in Clinical Obstetrics.

A Duckworth Nelson Prize, value £10 (biennial), in Clinical Medicine and Surgery.  
Prizes, value £60, to Dressers of Out-patients in Minor Surgery.

Special entries for Medical and Surgical Practice are made.

The London Hospital is now in direct communication by Rail and Tram with all parts of the Metropolis.

For Prospectus and particulars, apply personally or by letter to

Mile End, E. MUNRO SCOTT, Warden.

## GUY'S HOSPITAL.

### THE MEDICAL SESSION COMMENCES ON MONDAY, OCTOBER 2ND.

The Hospital now contains 695 beds, and includes wards for Obstetric, Ophthalmic, and other special departments.

THE MUSEUM OF ANATOMY, PATHOLOGY, AND COMPARATIVE ANATOMY—Curator Dr. Goodfellow—contains 11,000 Specimens, 4,500 Drawings and Diagrams, an unique collection of Anatomical Models, and a series of 600 Models of Skin Diseases.

APPOINTMENTS.—The House-Surgeons and House-Physicians, the Obstetric Residents, Clinical Assistants and Dressers, are selected from the Students, according to merit, and without payment. There are also a large number of Junior Appointments, every part of the Hospital Practice being systematically employed for instruction.

ENTRANCE SCHOLARSHIPS.—Open Scholarships, of One Hundred and Twenty-five Guineas, in Classics, Mathematics, and Modern Languages. Open Scholarships, of One Hundred and Twenty-five Guineas, in Chemistry, Physics, Botany, and Zoology.

PRIZES, &c.—Six Scholarships, varying in value from £10 to £50 each, for general proficiency in Medical Study. The Treasurer's Gold Medal in Medicine; the Treasurer's Gold Medal in Surgery; the Gurney Hoare Prize of £25, for Clinical Study; the Beaney Prize of 30 guineas for Pathology; the Sands Cox Scholarship of £15 per annum for three years, for Physiology; the Michael Harris Prize of £10, for Anatomy.

For further information apply to the Dean, Dr. P. Taylor,

Guy's Hospital, London, S.E., July, 1882.



# UNIVERSITY OF GLASGOW

SESSION 1882-83.

**THE MEDICAL SESSION** will be opened with an Introductory Discourse by Professor GAIRDNER, M.D., on **TUESDAY, OCTOBER 31, 1882.**

## WINTER COURSES.

Zoology, 9 a.m.—Professor Young.

Clinical Medicine, 9 a.m.—Professor M'Call Anderson and Professor Gairdner.

Clinical Surgery, 9 a.m.—Professor George Buchanan and Professor Macleod.

Chemistry, 10 a.m.; and Chemical Laboratory, 9 a.m. to 4 p.m.—Professor Ferguson.

Anatomy: Senior, 11 a.m.; Junior, 2 p.m.; and Practical Anatomy, 9 a.m. to 4 p.m.—Professor Cleland, Dr. William Allen, and other Demonstrators.

Practice of Physic, 11 a.m.—Professor Gairdner.

Materia Medica, 12 noon, and Pharmaceutical Laboratory.—Professor Charteris and Dr. Napier.

Institutes of Medicine, 12 noon, and Physiological Laboratory.—Professor M'Kendrick, and Dr. J. M'Gregor Robertson, the Muirhead Demonstrator.

Surgery, 1 p.m.—Professor Macleod.

Midwifery. 4 p.m.—Professor Leishman.

Public Health.—Professor Simpson.

## SUMMER SESSION.

During the Summer Session the Courses of Botany (Professor Bailey Balfour), Practical Chemistry, Forensic Medicine (Professor Simpson), and Clinical Medicine and Clinical Surgery are given. There are also Courses of Anatomy (Lectures on Embryology), Practical Anatomy, Practical Zoology, Vegetable Histology, and Practical Botany, Practical Physiology (including Histology), Practical Materia Medica, Practice of Physic, Practical Pathological Histology, and Operative Surgery.

**LECTURERS.**—Pathology—The Courses of the Pathologist of the Western Infirmary, Dr. Joseph Coats, and of the Pathologist of the Royal Infirmary are recognised.

Diseases of the Eye.—Thomas Reid, M.D., Waltonian Lecturer (Summer Course).

Insanity.—Dr. David Yellowlees, Royal Asylum, Gartnavel (Summer Course).

**WESTERN INFIRMARY.**—This Hospital, near the University, contains 380 beds for Medical and Surgical Patients, also Wards for Skin Diseases, and one for Diseases peculiar to Females.

**DEGREES.**—Three Medical Degrees are conferred, viz.: Bachelor of Medicine (M.B.) and Master of Surgery (C.M.), which must be taken together, and Doctor of Medicine (M.D.); all of which are recognised by the Medical Act as qualifying for practice throughout the British Dominions.

**COST OF EDUCATION.**—The Fee for each class is £3 3s., and the total minimum expenses for classes and graduation fees for M.B. and C.M. amount to about £90. The fee for M.D. is £15 8s.

**BURSARIES.**—Bursaries to the annual amount of about £1,000 may be held by students during their medical studies.

Full particulars connected with the course of education and examination required for the Degrees, and the Preliminary Examination required to be passed by Students before beginning medical study, will be found in the University Calendar (by post 3s.); or a syllabus of the regulations, fees, &c., may be obtained by applying to Mr. MOIR, Assistant Clerk of Senate.

## KING'S COLLEGE, LONDON. — MEDICAL

**DEPARTMENT.**—The WINTER SESSION will be OPENED on Monday, October 2nd, at Four P.M., when the Distribution of Prizes will take place, and an Address be given by the Right Hon. W. H. Smith, M.P.

A SPECIAL COURSE OF INSTRUCTION has been established for the Preliminary Scientific Examination at the University of London, including Inorganic Chemistry, Practical Chemistry, Practical Biology, Experimental Physics, Zoology, and Botany.

The following Entrance Scholarships will be given in October next, viz.:—

Two on the Warneford Foundation of £75 each, for previous education in General Literature and Science.

Two by the Clothworkers' Company, one of £100 and one of £50, for proficiency in Science only.

Two on the Sambrooke Foundation, viz., one of £60 and one of £40, for proficiency in Literature and Science.

During the ensuing Session there will be awarded five Medical Scholarships, viz., one of £80, one of £30, and three of £20, for Professional Efficiency; one for Chemistry, of £40; one of £50, for Resident Students only; and two Sambrooke Registrarships of £50 each.

Endowed prizes of the value of 65 guineas, and College prizes of the value of £60 are also awarded annually.

For Prospectuses and other information apply, personally or by post card, to J. W. Cunningham, Esq., King's College, London; or to Professor Bentley, Dean of the Department.

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THE NEXT

## WINTER SESSION

WILL COMMENCE ON

**WEDNESDAY, OCTOBER 25,**

AT 2 O'CLOCK P.M.,

**When the Introductory Address  
will be delivered.**

## STAFF OF PROFESSORS AND SUBJECTS TAUGHT:—

### VETERINARY MEDICINE AND SURGERY:

Professor WILLIAMS, F.R.S.E., F.R.C.V.S., Principal, Ex-President of the Royal College of Veterinary Surgeons, Corresponding Member of the Société Nationale et Centrale de Médecine-Vétérinaire Paris, and Professor of Veterinary Surgery to the Highland and Agricultural Society of Scotland

### PHYSIOLOGY AND PRACTICAL HISTOLOGY:

Professor JAMES HUNTER, F.R.C.S.E., L.R.C.P.E., Lecturer on Physiology, Edinburgh Medical School.

### ANATOMY:

Professor LEWIS, M.R.C.V.S.

### CHEMISTRY, PRACTICAL CHEMISTRY, AND TOXICOLOGY:

Dr. STEVENSON MACADAM, F.R.S.E.

Mr. FALCONER KING, F.C.S., F.I.C., City Analyst.

### MATERIA MEDICA, THERAPEUTICS, AND PRACTICAL PHARMACY:

Professor LEWIS, M.R.C.V.S.

### MORBID ANATOMY:

W. O. WILLIAMS, M.R.C.V.S.

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For Prospectuses and further particulars apply to Secretary, New Veterinary College, Gayfield, Edinburgh.

# FACULTY OF PHYSICIANS AND SURGEONS AT GLASGOW.

## Preliminary Examination in General Education.

THE following will be the periods of Examination during Session 1882-3:—Friday, 20th October, 1882; Friday, 30th March, Friday, 29th June, and Friday, 7th September, 1883. On each occasion the Examination will be continued on the succeeding day. Lists of subjects and all necessary information may be had on application to the Secretary.

FACULTY HALL, ST. VINCENT STREET, GLASGOW,  
SEPTEMBER, 1882.

ALEXANDER DUNCAN, B.A., Secretary.

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PRINCIPAL—PROFESSOR THOMAS WALLEY, M.R.C.V.S.

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R. URQUHART, Secretary.

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The Lectures and Hospital Practice qualify students for the various Examining Boards. Students can enter for the Hospital Practice or the Lectures, or for a single course of Lectures separately.

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The Prospectus and any further information about the School may be obtained from the Hon. Secretary.

JOHN HORSFALL, Hon. Sec.

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The SESSION COMMENCES ON MONDAY, OCTOBER 2ND.

Programmes may be obtained on application at the College, or by letter or post card, addressed to the Secretary, Royal College of Science, Stephen's Green, Dublin.

Professor J. P. O'REILLY, Secretary *pro tem*.

**UNIVERSITY COLLEGE, BRISTOL.****MEDICAL SCHOOL.**

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SURGERY—N. C. Dobson, F.R.C.S.

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PRACTICAL ANATOMY—Demonstrator, W. H. Harsant, F.R.C.S.

PHYSIOLOGY—R. Shingleton Smith, M.D. Lond., B.Sc., M.R.C.P.

CHEMISTRY—T. Coomber, F.C.S.

HYGIENE—D. Davis, M.R.C.S.

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**WINTER SESSION.**

**PHYSIOLOGY AND HISTOLOGY—**Brackenbury Professor Arthur Gamgee, M.D., F.R.S.

**ANATOMY, DESCRIPTIVE AND PRACTICAL—**Professor Morrison Watson, M.D., F.R.S.E.

**COMPARATIVE ANATOMY—**Professor A. Milnes Marshall, M.D., M.A., D.Sc.

**CHEMISTRY—**Professor Henry E. Roscoe, Ph.D., LL.D., V.P.R.S.

**ORGANIC CHEMISTRY—**Professor C. Schorlemmer, F.R.S.

**CLINICAL MEDICINE—**Professor William Roberts, M.D., F.R.S., F.R.C.P.

**PRINCIPLES AND PRACTICE OF MEDICINE—**Professor John E. Morgan, M.D., F.R.C.P.

**SURGERY—**Professor Edward Lund, F.R.C.S.; Assistant Lecturer F. A. Southam, M.B., F.R.C.S.

**PRACTICAL SURGERY—**Thomas Jones, M.B., B.S., F.R.C.S.

**PATHOLOGY AND MORBID ANATOMY—**Prof. J. Dreschfeld, M.D., M.R.C.P.

**SURGICAL PATHOLOGY—**Alfred H. Young, M.B., F.R.C.S.

**SUMMER SESSION.**

**PRACTICAL PHYSIOLOGY AND HISTOLOGY—**Brackenbury Professor A. Gamgee, M.D., F.R.S.

**PRACTICAL ANATOMY—**Professor Morrison Watson, M.D., F.R.S.E.

**MIDWIFERY AND DISEASES OF WOMEN—**Professor John Thorburn, M.D., M.R.C.P.

**DISEASES OF CHILDREN—**Henry Ashby, M.D., M.R.C.P.

**MATERIA MEDICA AND THERAPEUTICS—**Prof. D. J. Leech, M.D., M.R.C.P.

**MEDICAL JURISPRUDENCE—**C. J. Cullingworth, M.D., M.R.C.P.

**HYGIENE AND PUBLIC HEALTH—**Arthur Ransome, M.D., M.A.

**PRACTICAL SURGICAL PATHOLOGY—**A. H. Young, M.B., F.R.C.S.

**PRACTICAL MORBID HISTOLOGY—**Professor J. Dreschfeld, M.D., M.R.C.P.

**MENTAL DISEASES—**George W. Monld, M.R.C.S.

**OPHTHALMOLOGY—**David Little, M.D.

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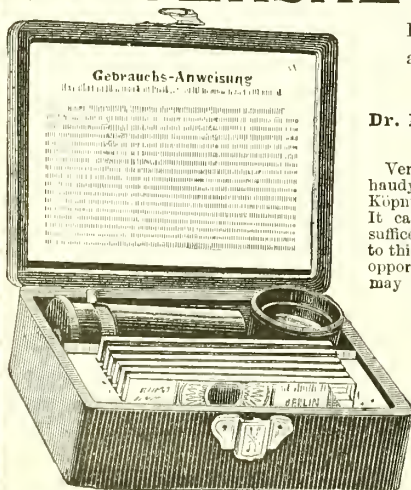
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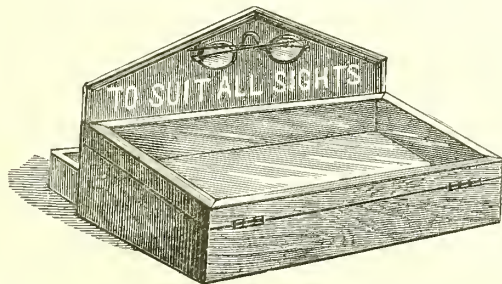
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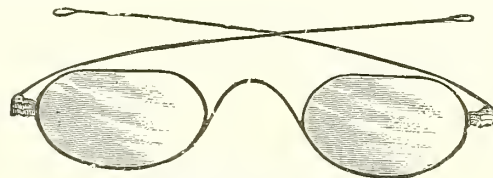
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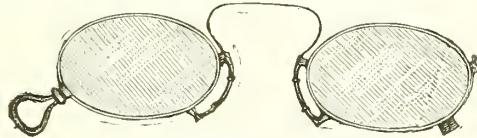
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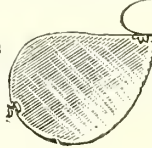
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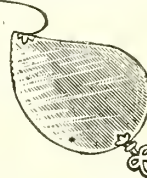
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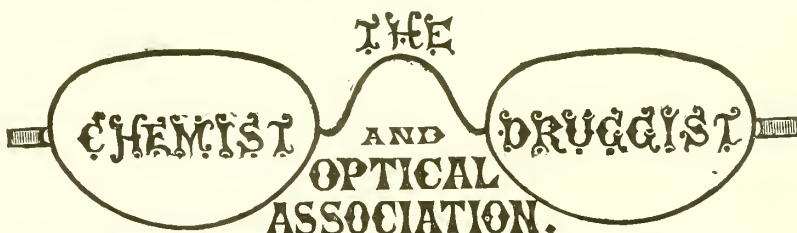
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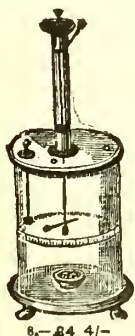
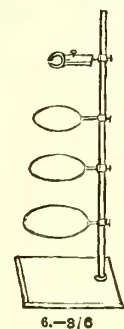
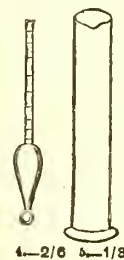
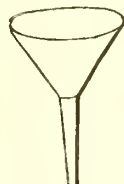
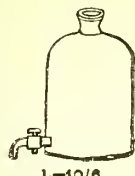
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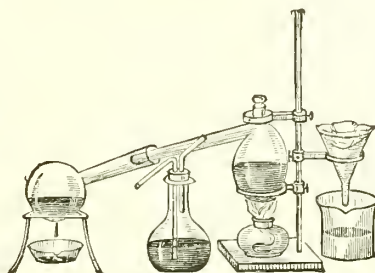
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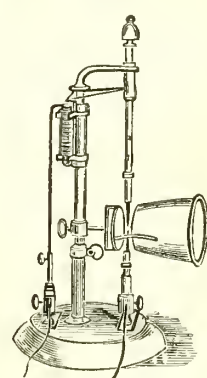
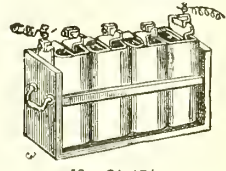
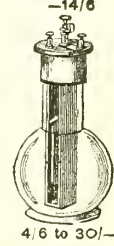
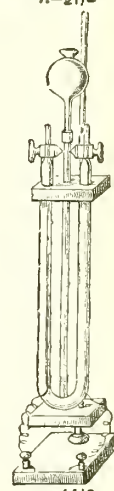
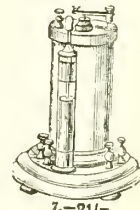
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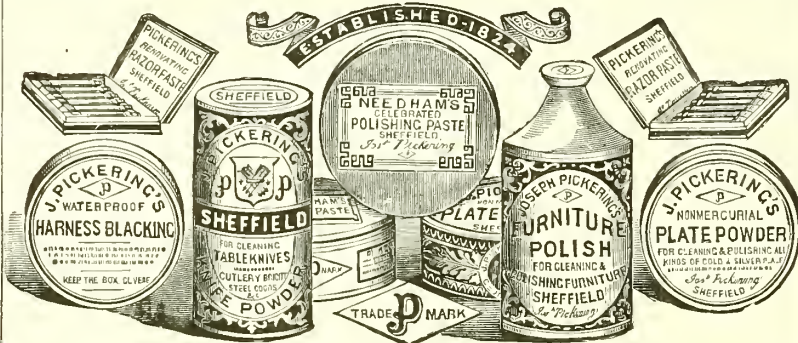
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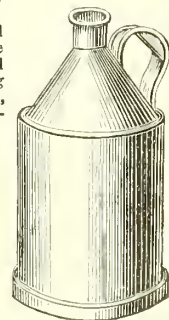
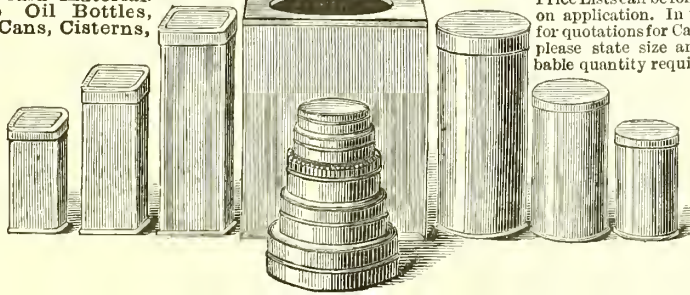
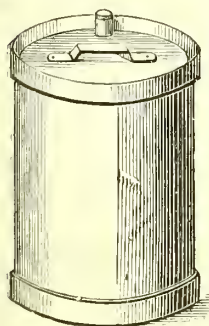
C. F. BROWN &amp; CO., 3 Tower Royal, LONDON, E.C.

## W. B. WILLIAMSON & SONS, Providence Works, WORCESTER,

MANUFACTURERS OF

TIN CANISTERS to hold  
Coffee, Mustard, Tobacco,  
Snuff, Biscuits, Jam, Con-  
fectionery, Paint, and every  
other description of Dry  
or Fluid Material.  
Also Oil Bottles,  
Oil Cans, Cisterns,  
&c.

PROPRIETORS OF

The PATENT for making  
PAINT TINS with LEAD  
TOPS.Names, &c., of Customers stamped  
on covers of Tins if desired. Oil Bottle  
Price Lists can be forwarded  
on application. In writing  
for quotations for Canisters,  
please state size and pro-  
bable quantity required.



# INDISPENSABLE IN EVERY LAUNDRY.



Prevents the Iron sticking to the Linen, and puts the same amount of finish on the Linen as when fresh from the manufacturers' hands.

ALWAYS SATISFACTORY.

**CAUTION.**—Each Packet and Box bears my Registered Trade Mark as annexed.

Sold in 1d., 3d., 6d., and 1s. Packets, and in large Boxes, for Hotels, Laundries, &c., 5s., 10s., and 20s. each.

May be had Wholesale from S. MAW & SONS, BOURNE & TAYLOR, HODGKINSON, STEAD & TREACHER, and BRIDGEMAN, BURBAGES & Co., London, or from the Sole Manufacturer.



Highest Award, Philadelphia, 1876. Gold Medal, Berlin, 1877. Highest Award and only Medal, Paris Exhibition, 1878. Highest Award, Melbourne 1881. Highest Award and only Medal, Frankfurt, 1881.



## BROWN'S SATIN POLISH

Put on by Sponge attached to Wire and Cork in each Bottle. No Polishing Brush required. Dries in a few minutes. Can be used by any lady without soiling her fingers.

The "Satin Polish" is the most Elegant Article of the kind ever produced. LADIES' SATIN, which have become Red and Rough by wearing, are restored to their ORIGINAL COLOUR and LUSTRE, and will not soil the skirts when used. TARNISHED PATENT LEATHER is improved by it.



For Travelling Bags, Trunks, Harness, Carriage Tops, &c., it is unequalled. It will not harden the Leather nor crack. It is not a spirit varnish. In Cartons, 4s. 6d. per dozen; 52s. per gross. Packed in Sawdust, 3s. 9d. per doz.; 43s. per gross. 2½%.

## AMERICAN MAGIC BRONZE

Is the best in the Market, and it can be used with good effect on Ornaments, Picture Frames, Iron and Fancy Work generally, as well as for Boots and Shoes. In Cartons, 7s. per dozen. 2½%. SOLD BY ALL WHOLESALE CHEMISTS AND DRUGGISTS' SUNDRIESMEN.

Factories: BOSTON; MONTREAL; 15 & 20 Norman's Buildings, ST. LUKE'S, LONDON.

TO CHEMISTS AND DRUGGISTS, CONFECTIONERS, ELECTRICIANS, DENTISTS, &c

**J. THOMAS DODDEMEADE, Wax Melter,**  
DEALER IN ALL KINDS OF WAXES,  
SPERMACETI, PARAFFIN, EARTH WAXES (WHITE & RED), MYRTLE, CORNUBA, STEARINE, ETC.  
PRICES AND SAMPLES ON APPLICATION.

Note the Address—42 Kynaston Road, Stoke Newington, London, N.

## SANDS' STANDARD DYES

Are the First and the Best; the Finest Dye and largest Package. 1d. Packets, on Cards, at 7/ per gross; 3d. Packets, 21/ per gross; 6d. Packets, 42/ per gross. And Ebonised Counter Cases, containing 1 gross 1d., at 7/, 7/; ½ gross 3d., at 21/, 10/6; ¼ gross 6d., at 42/, 10/6—for 28/ complete, no charge for case.

## SANDS' GOLD PAINT.

Retails at 1/ complete, containing, in box, Gold Powder, Mixing Liquid, Brush, and Palette. 8/ per dozen. Finds a ready sale everywhere, being applicable to so many purposes which suggest themselves. Larger sizes much more economical—3/6 size, 30/ per doz.; 10/6 size, 84/ per doz.

## EDISON'S STARCH ENAMEL.

1d., 3d., and 6d. Packets.

PRICE LISTS OF OTHER GOODS SENT FREE ON APPLICATION ENCLOSING TRADE CARD.  
All Goods bear a handsome profit, and any unsaleable exchanged.

**SANDS MANUFACTURING COMPANY,**  
121 GOSWELL ROAD, LONDON, E.C.



# STOP! READ! CONSIDER!

## SPECIAL NOTICE TO THE TRADE.

In answer to the numerous inquiries received in consequence of my Advertisement on page 49 of THE CHEMIST AND DRUGGIST of July 15, I beg to state herewith publicly that I will pay to any benevolent institution

### ONE HUNDRED POUNDS

for any case in which I am proved to have acted against my promises contained in the said Advertisement.

At the same time I must state, to prevent future disappointment, that in consequence of the numerous orders already coming to hand for

NATURE'S CONSTIPATION CURE.

**KANOLDT'S APERIENT  
TAMARIND LOZENGES**

TRADE



MARK.

and my APERIENT TAMARIND FRUIT CONSERVES, I shall shortly not be able to execute the orders by return as hitherto until the enlargement of the works is completed. It is therefore advisable for the Trade to favour me as soon as convenient with their orders intended. To give an additional interest to the firms who are my earliest patrons in this my new undertaking, I have decided to supply in every district only a limited number of firms in proportion to the number of inhabitants; and those ordering only later on, when the demand for my Speciality is overwhelming, must blame themselves if I am then probably obliged to refuse to supply them.

### INDEPENDENT OF THE SPECIAL TERMS ALREADY OFFERED

in my last confidential circular, I will make, in January next, a handsome present, in value equal to 25 per cent. of the amount paid by him to me for Lozenges from now until then, to that employer whose assistant sells, with his permission, until December 31, the largest quantity of my preparation; and the assistant in question will receive a similar reward for his services. All correspondence in reference must reach me not later than January 3 next, and the result will be published in the January number of THE CHEMIST AND DRUGGIST.

**PAUL METZ,** 10 JEWIN STREET,  
ALDERSGATE STREET, **LONDON, E.C.**

**SOLE AGENT FOR KANOLDT'S APERIENT TAMARIND LOZENGES,**

*Agent for some of the best Continental Manufacturers of*

**CHEMICAL GLASS AND PORCELAIN THERMOMETERS, GERMAN SASH TOOLS, CAMEL HAIR PENCILS, &c.,**

And Manufacturer of the

**"WHEEL BRAND"**



**BEST QUALITY**

**WHITE WILLOW BOXES.**

# BREWERS' SHOW, October 16, 1882.

---

**STAND.****ROW 30.**

---

## BRATBY & HINCHLIFFE, MANCHESTER,

WILL EXHIBIT THEIR WELL-KNOWN

# SODA-WATER MACHINERY AND APPLIANCES

AT THE ABOVE SHOW,

Together with all kinds of Accessories used in the Manufacture of Aërated Waters, Fruit Syrups, and Cordials.

Amongst the Exhibits will be found the Celebrated "Lilliputian" Plant, and other first-class Machinery, by Galloway; the Rapid "Paragon" Turnover Filling Machine, McEwen's Patent (fills all Patent Bottles with one motion); Nall's Packing Cases for all the Bottling Trades; Essences, Drugs, and all Ingredients for making first-class Aërated Waters; Filters, Syrup Pans, Bottling Machines, Steam Engines and Boilers, Gas Engines, Generators, and Complete Outfit for those desirous of embarking in the trade.

Chemists calling at our Stand will be furnished with a copy of our Catalogue on presenting their business card, and consultations and estimate for complete plants will also be given free.

For the convenience of parties about to enter the trade, we shall be glad to wait upon them personally at their places of business to give advice and estimates, for which no charge will be made.

Every requisite for the Trade supplied, and instructions given in the Manufacture of all kinds of first-class Aërated Waters.

---

## BRATBY & HINCHLIFFE, AËRATED WATER ENGINEERS, POTT ST. AND SANDFORD ST., ANCOATS, MANCHESTER.



# SODA WATER MACHINERY

AND ALL ACCESSORIES FOR THE TRADE BY

## BRATBY & HINCHLIFFE,

SOLE AGENTS FOR JAMES GALLOWAY, BOLTON.

All communications receive prompt and careful attention. Catalogues or Illustrated Circulars will be forwarded on application. Amongst the more recent

improvements of Messrs. Galloway is the new well known

### LILLIPUTIAN SODA WATER PLANT,

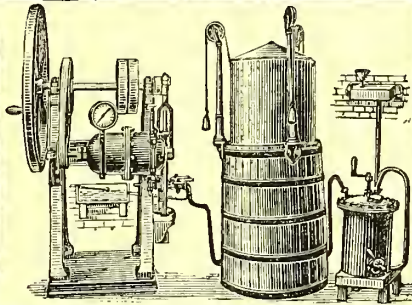
As the well known and recently designed for parties commencing in the trade. It is the cheapest, simplest and most durable plant ever sent with great working capacity. It is offered to the trade, and made for either hand or power. No skilled labour is required to work it, and we send a man to put the machine to work.

#### No 1 PLANT.

MAKES 400 DOZ PER DAY AND IS FITTED WITH 1½ PUMP AND 2 GAL. CYLINDER PRICE INCLUDING CASOMETER AND GENERATOR AND ALL FITTINGS AS SHOWN

NO - £52 10s - EXTRAS

Any portion of this plant is sold separately if required.



#### No 2 PLANT.

MAKES 600 DOZ PER DAY AND IS FITTED WITH 2X PUMP AND 4 GAL. CYLINDER PRICE INCLUDING CASOMETER AND GENERATOR AND ALL FITTINGS AS SHOWN

NO - £63 - EXTRAS.

Full Descriptive Circulars forwarded on application.

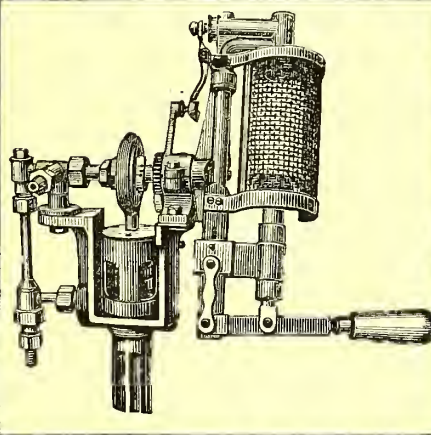
We are still the Sole Agents for the M.E.WEN

### RAPID PARAGON TURNOVER FILLING MACHINE.

Over 500 of these simple and durable machines are now in use, having been sold in 20 months.

THEY SAVE 20 PERCENT IN GAS ALONE AND DO NOT WASTE THE SYRUP, HAVING NO TUBE THE SYRUP PUMP CAN BE REGULATED TO THE GREATEST NICETY AND DOES NOT WORK WHEN BOTTLING SODA WATER ALONE

The simplest, quickest, cheapest and best durable labour saving. Price complete with Glass Barrel Syrup Pump and all latest improvements, £10 10s. Before purchasing any other machine please send for this latest Descriptive Circular of working parts and instructions how to use.



THEY FILL AND SYRUP ALL KINDS OF INTERNAL PATENT STOPPERED BOTTLES WITH ONE MOTION AT THE RATE OF 60 DOZ LARGE AND 80 DOZ SPLITS PER HOUR

SPECIAL NOTICE Every Soda Water Maker should obtain our MONTHLY LIST which contains particulars of the largest stock of new and second hand Soda Water Machinery and Appliances in the Kingdom and also our Catalogue and Circulars of every kind of Machinery and Appliances used by the Trade.

GENERATORS  
DOUBLE ACTION PUMPS  
SINGLE ACTION PUMPS  
PATENT FILLING MACHINES

WE KEEP IN STOCK ALL KINDS OF  
COPPER & GUNMETAL CYLINDERS  
STEAM ENGINES AND BOILERS  
Combined or separate GAS AND WATER ENGINES.  
SHAKING FRAGERS BELTING PACKING CASES

GASOMETERS  
BOTTLE WASHING MACHINES  
PATENT & ORDINARY BOTTLES  
DRUGS CORNS TINFOIL &c.

### MANUFACTURERS OF DERESINIZED SOLUBLE ESSENCES.

Imparters of Essential Oils, Fruit Essences, and other Chemicals and Ingredients for manufacturing pure Aerated Waters.

SOLUBLE ESSENCES.			
LEMON	Per lb. 5/0	HOREHOUND	Per lb. 5/0
GINGER ALE	5/0	PEAR JARGONELLE	3/0 & 5/0
ORANGE (SWEET)	5/0	PINE APPLE	3/6 & 5/6
ORANGE (BITTER)	5/0	RASPBERRY	5/0
GINGER	5/0	PHOSPHOR & IRON	"HOT TON"
CAPSICUM	5/0	(For Medicinal Family Drinks)	8/6
		ORANGE BITTERS	5/0 & 7/6
		TONIC (For Tonic Water)	7/6
		ORIS	5/0 & 7/6
		ROSE	2/6 & 14/6
		SPICED ALE	5/0 & 8/0
		CINNAMON	6/6
		LEAVES	5/6
		LIMES	5/6

All the above Essences are manufactured by an entirely new process, and for purity and general excellence of flavour they cannot be equalled while they mix perfectly bright with Water or Syrups. These Essences impart rich, fruity, and amiable flavours to the drinks, and a trial will at once convince the trade of their superiority over others in the market. Essential Oils which do not mix, but float on the top of the Syrup, causing great waste.

## BRATBY & HINCHLIFFE,

43 POIT ST AND SANDFORD ST. ANCOATS, MANCHESTER.



**HONOURABLE MENTION,**  
International Food Exhibition, Agricultural Hall, London, October, 1880.

# HAY'S SOLUBLE ESSENCE OF JAMAICA GINGER

(Guaranteed Pure and Free from Capsicum).

**Trade Price, 5s. per lb.; 12 lbs. and upwards, 4s. 6d.**

Highly adapted for the manufacture of *Transparent Aerated Waters*, and for all *Dietetic, Medicinal, and Pharmaceutical* purposes.

## Medical Opinions on

### HAY'S Soluble Essence of Ginger.

"Singularity free from resin."—*The Lancet*.

"It should entirely supersede the official preparation of the British Pharmacopœia."—*Medical Press*.

## Medical Opinions on

### HAY'S Ginger Champagne.

"An excellent and most agreeable beverage."—*The Lancet*.

"Made by Mr. HAY, of Hull, with his well-known Soluble Essence of Jamaica Ginger, takes rank as a pure, wholesome, stimulating, and non-alcoholic beverage."—*British Medical Journal*.



## Medical and other Opinions on the

### Ginger Beer made from HAY'S Soluble Essence.

"An excellent effervescent drink."—*The Lancet*.

"Preferable to some wines we have tasted under the name of champagne."—*Medical Press*.

"Clear and transparent, and very pleasing to the palate."—*Medical Times and Gazette*.

"Has the purest Jamaica Ginger aroma, distinguishable as soon as poured out. It is a beverage fit for any gentleman's table, and ought to attain great popularity."—*The Chemist and Druggist*.

# THE COMPOUND ESSENCE

(Guaranteed Pure and Free from Capsicum).

This Essence, which is an addition of VANILLA, LEMON, and OTHER FLAVOURS to the above, is strongly recommended for the manufacture of Ginger Beer, Wines, &c., to which it imparts with the Ginger a Peculiarly Fine Fruity Flavour and Aroma.

**Trade Price, 5s. 6d. per lb.; 12 lbs. and upwards, 5s.**

# THE COMPOUND FORTIFIED ESSENCE

Specially adapted for the Manufacture of the FINEST

## GINGER ALE.

This Essence is strongly recommended for the manufacture of the finest Ginger Ale and Ginger Beer. It imparts, with the exquisite Ginger Aroma of the first-mentioned Essence, a peculiarly fine fruity flavour combined with the fullest amount of fragrance and pungency.

**Trade Price, 5s. 6d. per lb.; 12 lbs. and upwards, 5s.**

# HAY'S GINGER ALE ESSENCE,

HIGHLY CONCENTRATED.

*This Essence is a complete Bouquet of the finest Ginger, Lemon, and other flavours, in a highly concentrated state.*

Ginger Beer and Ginger Ale made with this Essence will possess an amount of Aroma, Flavour, and Quality that have hitherto been without precedent, and that will be sure to command a large sale.

THE COST IN MANUFACTURE IS ABOUT ONE FARTHING PER DOZEN BOTTLES.

**Trade Price, 9s. per lb.; 12 lbs. and upwards, 8s. 6d.**

# GINGER ALE EXTRACT

SUPPLIES PUNGENCY, AROMA, COLOURING, AND FLAVOURING.

This Extract is strongly recommended for the manufacture of Ginger Ale, to which it imparts an unusually Fine Flavour and Great Brilliancy, at a cost of a little under 1d. per dozen bottles.

**Trade Price, 4s. 6d. per lb.; 12 lbs. and upwards, 4s.**

PREPARED BY

**W. HAY, Manufacturing Chemist, 4 REGENT'S TERRACE, HULL.**

Agents—Messrs. HEARON, SQUIRE & FRANCIS, Wholesale Druggists,  
5 COLEMAN STREET, LONDON, E.C.

W. HAY CAUTIONS THE TRADE against the use of those spurious so-called SOLUBLE ESSENCES which, besides having NO GINGER AROMA, are FLAVOURLESS, RANK, and DISAGREEABLE, and are little more than TINCTURES OF CAPSICUM.

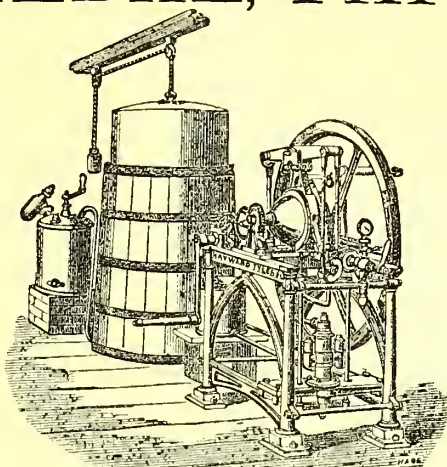


# SODA WATER MACHINERY,

WITH ALL THE LATEST IMPROVEMENTS.

## GOLD MEDAL, PARIS, 1878.

2,000 of these Continuous-process Machines have been sold, and many Thirty and Forty Years old are still in good condition and use, showing great durability and excellent finish of workmanship.



Bottling Machines, with and without Syrup Pumps; Syphon Fillers, Macdonell's Patent Automatic Bottling Machines, by which one boy or girl can turn out 140 dozen per day.

SOLE MAKERS-

## HAYWARD TYLER & CO., ENGINEERS, WHITECROSS ST., LONDON.

ESTABLISHED 1815.

[4]

Awarded Six Gold and Silver Medals, &c.: Sydney, Melbourne, Brighton, Sanitary Institute, London Food, New Zealand.

ORANGE CHAMPAGNE,  
SPARKLING VINITA,  
SPARKLING MALT WINE,  
SPARKLING LIME JUICE,  
GINGER CHAMPAGNE.

*In Champagne Bottles and ½-Bottles.*



SODA WATER,  
SELTZER WATER,  
POTASS, LEMONADE,  
GINGER ALE, &c., &c.

*In 10-oz. Cylinders.*

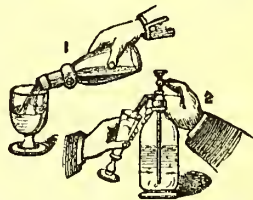
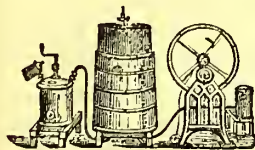
*Samples and Lists on application.*

# SODA WATER MACHINERY BY BARNETT & FOSTER,

23<sup>rd</sup> FORSTON STREET, SHEPHERDESS WALK, LONDON, N.

Prize Medals—London, 1862, 1873, 1874; Paris, 1867,  
1878; Vienna, Philadelphia, Cape, &c. Highest  
Award, Sydney, 1879-80.

Our Machines are universally adopted throughout the world for the manufacture of all kinds of Aerated Drinks, whether in bottles, syphons, or counter fountains. There are in England alone over 1,500 factories where our Machinery is in use. They are the simplest, safest, and cheapest for the purpose, and produce a highly-charged gaseous water free from metallic or foreign contamination.



All our Machines have a Gasometer, and it forms a most important necessity where purity of product is required, as in this the gas is expanded and purified; it also removes the possibility of explosion, and avoids the necessity of complication—these we consider of greater importance than the saving of a few inches of floor space.

*Our valuable Book of Recipes and Instructions accompanies every Machine, and the most unskilled can at once produce Waters of the highest class.*

Sole Agents for Codd's Patent Bottle, Fig. 1. Sole Manufacturer of the "London-made" Syphon Fig. 2.

PATENTEES OF THE IMPROVED CORKING MACHINE FOR CHAMPAGNE BOTTLES.

ILLUSTRATED CATALOGUE FORWARDED FREE.

# A FEW REMARKS ON THE AËRATED WATER TRADE.

BY N. G. WILCOCKS, BATH.

Why should Chemists and Druggists buy Aërated Waters from other makers instead of manufacturing all they sell themselves? They cannot adopt a more appropriate Auxiliary Trade, nor is there one which is so sure to yield a good return on the investment, or so likely, if conducted with energy, to produce

## A FORTUNE.

The consumption of Aërated Waters is vastly on the increase, and Chemists and Druggists can, if they will, retain the business in their own hands.

I ask any Chemist and Druggist who is willing thus to increase his income to communicate with me. I shall be happy

to advise with him respecting the erection of a plant, large or small, and will give him all necessary information to

## START HIM IN THE BUSINESS.

I can also satisfy him, by the testimony of hundreds in the trade, that in dealing with me he will obtain just and honest treatment, and that the machinery I supply is of the soundest materials, constructed with the highest skill, and sold at the lowest possible rates of profit.

## EASY TERMS OF PAYMENT.

All Machines sold in England and Wales can be had on my Easy Terms system. That is, the purchaser pays a certain sum monthly for the hire, and after two years the machine becomes his own property. The payments can be easily made out of profits, and when they are completed a profitable business will be established. No Gazette registration is required, and the transaction is strictly private.

## COPY OF UNSOLICITED TESTIMONIAL.

From W. C. HALLS, Chemist,  
MINERAL WATER MANUFACTURER,  
BRIDGE STREET, NEWARK.

To Mr. N. G. WILCOCKS,  
BATH.

*Sir,—Unsolicited I must express my entire satisfaction with the Machinery you have lately supplied me with, viz.: the "Favourite," "Eclipse," Filling Rack, Syphon ditto. I think the "Eclipse" a splendid invention, and the waters are well charged. As a whole it is everything that can be desired, and I can recommend this size plant to any Chemist or Publican who consumes a reasonable quantity of waters, as the knowledge requisite to work it is so small. I have had nine years' experience in the trade, so feel confident to form an opinion. If this information is of any service to you, you may make use of it.*

*Yours respectfully,* W. C. HALLS.

# N. G. WILCOCKS, ENGINEER, BACK STREET, BATH.



**BREWERS' EXHIBITION, OCTOBER 16, 1882.**

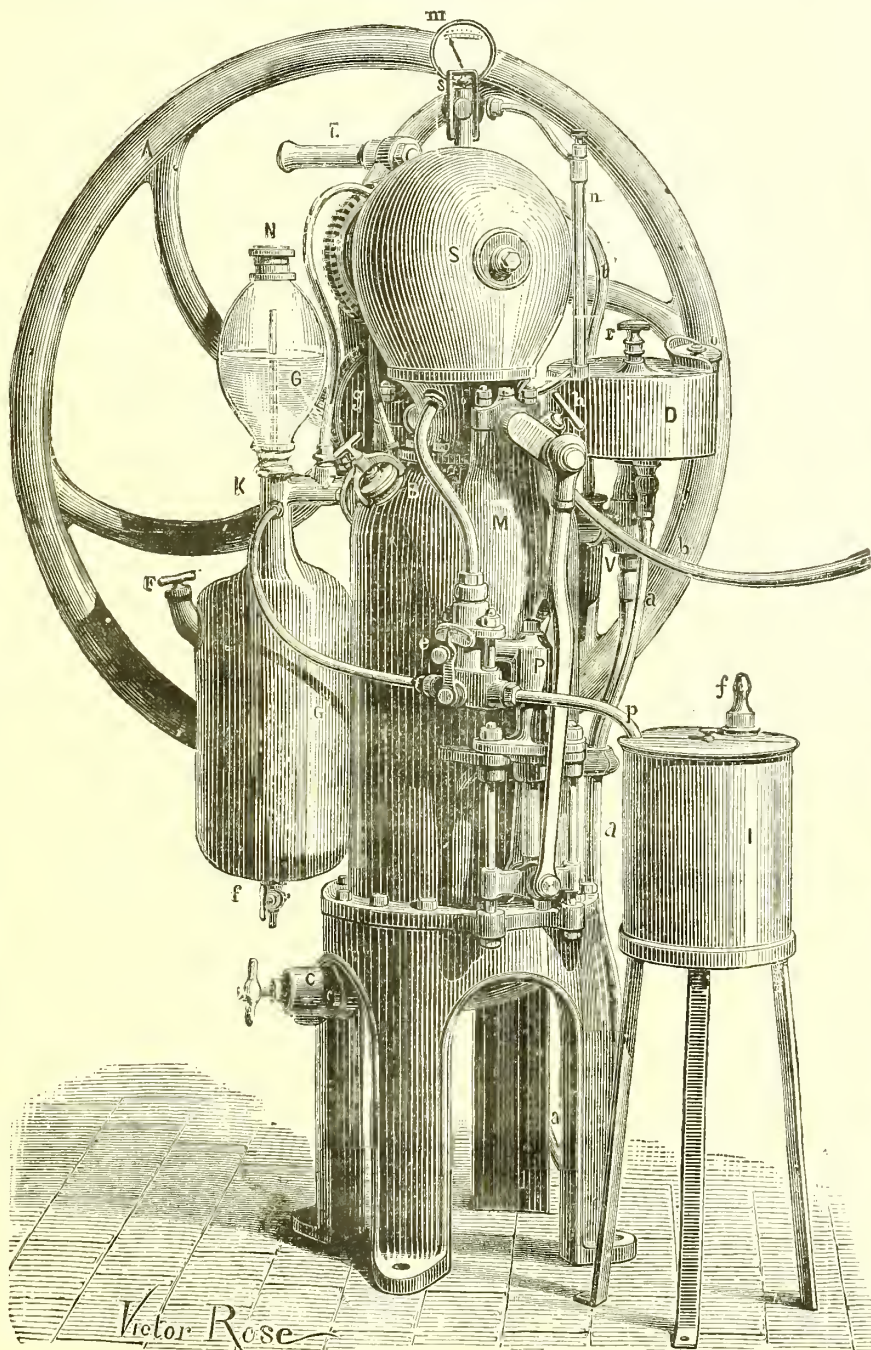
# H. FAVARGER,

**PRACTICAL AND CONSULTING AERATED WATER ENGINEER,**

Will Exhibit all the various sizes of the well-known

**M O N D O L L O T**

Soda Water Machines.



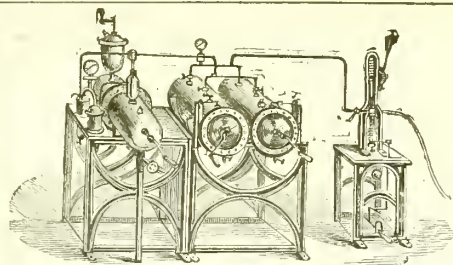
**M O N D O L L O T**

Soda Water Machines.

*Catalogue of all the necessary requirements for the Trade on application to*

**H. FAVARGER, ENGINEER, LONDON.**  
75 TURNMILL STREET,





SODA WATER MACHINE COMPLETE, WITH RACK.

# SODA WATER MACHINERY, ALL KINDS. PATENT STOPPERED BOTTLES ALL KINDS.

## ICE-MAKING MACHINES,

AND ALL REQUIREMENTS OF EITHER TRADE.  
SEPARATE CATALOGUES, POST FREE.

BEFORE BUYING, SEND FOR CATALOGUE TO  
**DAVENPORT & CO., 99<sup>N</sup> High Holborn, LONDON.**

ALSO AGENTS FOR

HAYWARD TYLER & CO.'S MACHINERY.  
BARRETT'S PATENT BOTTLES.

CHEAVIN'S FILTERS.  
WILKINSON'S PATENT BEER BOTTLES.

CROSSLEY'S AND "BISSCHOP" GAS ENGINES.

## WEST'S PATENT PARAGON

# —SIPHONS—

14/6 per doz. and Nickel Plated!!

"A marvel among Siphons."—Vide Press Notices.

Send for Descriptive Circular to

**H. J. WEST & CO.,**

Stamford Works—116, 118 Southwark Bridge Road,  
LONDON, S.E.

## SYPHONS.

**H. FAVARGER** has much pleasure in announcing that, encouraged by the enormous demand last season for the well-known MONDOLLOT SYPHONS, he has made special arrangements for the prompt supply of these convenient vessels. Nevertheless, he would remind his customers, and also intending purchasers, that it is greatly to their advantage to order early, as then the necessary time can be given for an especially well finished article to be turned out.

The few following are the leading points of these Syphons:—

**THE TOP** is of pure tin, which is warranted to contain no trace of lead, copper or other injurious metal. It is carefully turned and polished.

**THE SPOUT** is cast in one piece with the top, and not soldered on, so that it is almost impossible to break it off.

Its curved shape also facilitates the egress of water, thereby preventing to a great extent the loss of gas which occurs whenever the flow of aerated water is obstructed by sharp angles.

**THE LEVER**, usually a source of trouble from constant breakage, is specially made to resist heavy blows, being of great thickness and strength at the point of contact with the head of the syphon.

**THE PISTONS** are of pure tin.

**PRICES.**—Short Lever Cylindrical White or Blue Glass, 26/- per doz. Long Lever Cylindrical White or Blue Glass, 27/- per doz. Special terms for large quantities. Name on head free. Silvering from 12s. per dozen. Nickeling by new process, 4s. per dozen. For Samples and further particulars apply to

**H. FAVARGER, 75c TURNMILL STREET, LONDON.**

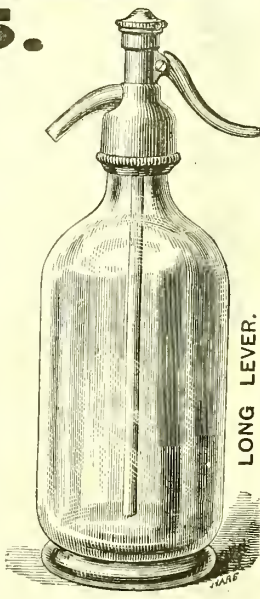
**THE SPRINGS** are of most elastic and durable metal.

**THE WASHERS** are of the best vulcanised rubber.

**THE MILLED RINGS** that fix the top on the bottle are made in two halves, so that in the event of a syphon being broken, the top can be transferred by an unskilled hand to another bottle.

**THE GLASS** is of the purest and toughest that can be made, and is of extra weight so as to resist the heavy internal pressure it is subjected to.

The necessary tools and appliances for repairing the syphons, and all the separate parts, are supplied at moderate prices. Every syphon is tested to a high pressure before being sent out.

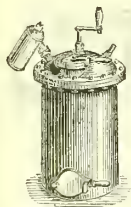
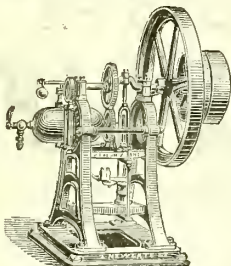
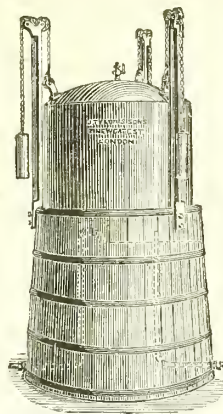
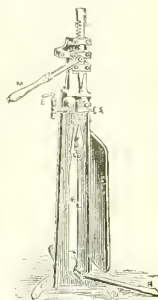




# J. TYLOR & SONS, 2 NEWGATE STREET, LONDON,

MANUFACTURERS OF

## SODA WATER MACHINERY,

To produce from 50 to 2,000  
dozen per day.ILLUSTRATED CATALOGUES  
ON APPLICATION.Cast Lead  
Generator, with  
Improved Slide  
Cocks.A 1. J. Tylor & Sons'  
Soda Water Machine.  
500 to 700 doz. per day.Labour saving  
Bottling Ma-  
chines, with or  
without Syrup  
Pump, for Cork  
or Stoppered  
Bottles.

## VALLET'S PATENT IMPROVED STOPPERED BOTTLES,

Fig. 2. For Mineral Waters and Gaseous Liquids,

Are now used by upwards of 900 Soda Water Manufacturers  
in the United Kingdom.

PRICES (Per Gross).—Patent Stopper, as per Fig. 1, 4/6; ditto, as  
Fig. 3, 4/6; ditto, as per Fig. 4, 4/6; Patent Stoppered Bottles, ready  
for use; ditto Half Bottles ditto; Patent Unstoppered Bottles; ditto  
Half Bottles; Fig. 9 Boxwood Bottle Openers, polished, 8/6; ditto,  
fitted with rubbers, 10/6; Common Wood Bottle Openers, 5/6; ditto,  
fitted with rubbers, 7/6; Fig. 10, New Bottle Opener, 6/-.

ROYALTY FREE.

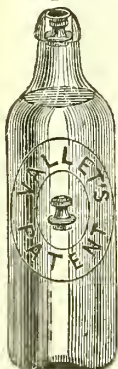


Fig. 1.

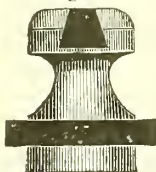


Fig. 3.

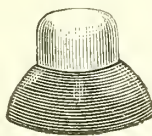


Fig. 1 Stoppers, when invoiced separately, are ready fitted with the rubber  
washer on, and are easily inserted into the Bottle by the simple pressure of the  
thumb, the washer at the same time folding in the hollow part of the stem  
when passing into the Bottle. It is the only Stopper which requires no tool to  
fit the Bottle with; and when a Bottle breaks, which seldom occurs, the Stopper  
is always fitted with this washer, ready to be inserted in a new Bottle. Therefore  
it is the most durable and inexpensive Stopper in the trade.

ADVANTAGES.—These Stoppers cannot break the Bottles. The smallest  
surface of indiarubber ever exposed to the liquid of any Stopper out. The  
Stoppers are inserted without trouble. No extra cost for Bottles. The Stoppers  
are cheap, very durable, and particularly clean. The Filling Machine is not  
expensive, and quick in action. Any Filling Machine, however, will do. The  
Patentee guarantees the Stoppers perfect gasholders, therefore no leakage is  
possible. That Bottles may be opened, with or without an opener, by the  
pressure of the finger.

### NOTICE TO THE TRADE.

If having come to my knowledge that certain parties conversant with the  
great and acknowledged superiority of my Patent Stopper, have so re-modelled  
theirs so as to constitute a clear case of infringement upon my right, I wish it  
to be known that I intend to take such steps against the said parties as may seem  
desirable, should this notice not be effectual.

Sample and Particulars sent on application to

L. VALLET, 49 EVERTON RD., LIVERPOOL.

## EUGENE GERAUT & CO.

### SELTZOGENES.

1878. For immediate production of Eau de Vichy, Soda  
Water, sparkling Lemonade, and Aerated Waters.  
First introduced by EUGENE GERAUT & Co. in 1853.

3-pint Size, Wire, 13/0; Cane, 13/6  
5-pint " " 18/0; " 19/0  
8-pint " " 30/0; " 32/0

Strongly silver-plated top, 5/ each extra.

3-pint size, strongly silver-plated, richly decorated porce-  
lain stands, 30/ each; 5-pint size, ditto, ditto, 35/ each;  
8-pint size, ditto, ditto, 48/ each.

Our well-known Seltzogenes are improved yearly, and have  
already stood a public test of upwards of Twenty Years,  
and are acknowledged as THE VERY BEST.

POWDERS FOR THE ABOVE: 3-pint, per dozen boxes, 22/;  
5-pint, ditto, 36/; 8-pint, ditto, 65/.

Illustrated Catalogue on application.

Large Discount.

1 &amp; 2 Corporation Buildings, Farringdon Road, London, E.C.



1873.

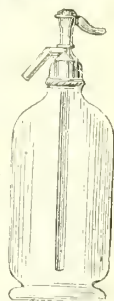
### SYPHONS.

Clear or coloured glass, pure ENGLISH  
BLOCK TIN TOPS, with piston or cap.

22/6

per dozen, for quantities of not less than  
one gross.

Packing in Cask, 5/ per gross.

The Name marked on the metals free of charge for  
quantities of not less than one gross.The Name engraved with Trade Mark, from 1/6 to 2/  
per dozen extra.

## GLASS BOTTLES

OF EVERY DESCRIPTION FOR THE MINERAL WATER TRADE.

CHEMISTS, PERFUMERS, &amp;c.

## SYPHONS OF THE BEST FRENCH MANUFACTURE.

Cash Buyers should apply for Samples and Prices before placing their Orders.

## J. MOUNTAIN & CO.,

83 FINSBURY PAVEMENT, LONDON, E.C.  
ESTABLISHED 1853.

**Prize Medals—**  
**YORK, 1879.** **SYDNEY, 1879.** **MELBOURNE, 1880.** **ADELAIDE, 1881.**

THE  
**BRITISH SYPHON MANUFACTORY,**  
 EUGSTER & KOERTGEN, Proprietors,  
 .2 Gresham Buildings, Basinghall Street,  
 WORKS: LAMBETH, S.E. **LONDON, E.C.**




### SELTZOGENES.

3 pint size, wire, 13s.; cane, 13s. 6d.  
 5 " " " 18s.; " 19s.  
 8 " " " 30s.; " —

Silverplated top or wire, 5s. extra.  
 Drop Cups, Measures, &c.

LIBERAL DISCOUNT FOR QUANTITIES.

#### IMPORTANT.

In ordering our Seltzogenes through Agents, distinctly state that you require the "Lion and Shield" Brand, it, as often instituted. All stamped thus: **GUARANTEED first-class**  **PERFECT, and of workmanship.**

### SYPHONS.

Short Levers, 22 6; Long Levers, 24/- per dozen net.

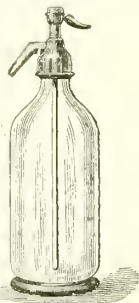
WHITE, BLUE, AMBER, OR GREEN BOTTLES.  
 CYLINDRICAL OR OVAL SHAPED.

SILVERPLATED TOPS FROM 8s. PER DOZEN EXTRA.  
 Name stamped on metal tops free for one gross.

Name and Trade Mark engraved on the bottles by the acid process from 1½d. to 2½d. each extra.

### Soda Water Machinery.

NEW AND IMPROVED CONTINUOUS APPARATUS  
 With one or two Pumps.  
 GENERATORS, WASHING VESSELS, GASOMETERS,  
 SYPHON FILLING AND SYRING DOSING MACHINES.



EACH SELTZOGENE AND SYPHON THOROUGHLY TESTED BEFORE SENT OUT. ALL METAL WARRANTED FREE FROM LEAD.

## "ABSOLUTELY PURE."

SEE ANALYSIS. Sent post free on application.

# ELLIS'S



REGISTERED.

CORKS BRANDED "R. ELLIS & SON, RUTHIN," and every label bears their Trade Mark. Sold everywhere, and wholesale of

**R. ELLIS & SON, RUTHIN, NORTH WALES.**

London Agents: W. BEST & SONS, Henrietta St., Cavendish Square.

NEW AND IMPORTANT DISCOVERY.

# GINGER ALE

FROM PURE JAMAICA GINGER.



THE ROYAL YORKSHIRE GINGER ALE, from Pure Jamaica Ginger, is Non-Intoxicating.

The difficulty of using Ginger in the Manufacture of "Ginger Ale," and at the same time having a CLEAR and SPARKLING DRINK, has, after much labour and expense, been thoroughly overcome by

Messrs. HARSTON & CO., of LEEDS.

ABSOLUTELY PURE.—See Analysis by Drs. J. H. HASSALL, M.D., and OTTO HEYNER, F.C.S.

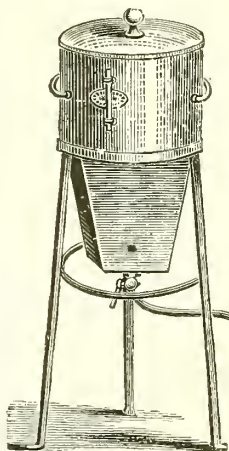


# MAIGNEN'S PATENT FILTRE RAPIDE.

For the clarification of all liquids, hot or cold  
 in large or small quantities.

BIJOU CLASS.

CLASS B.



Class B.

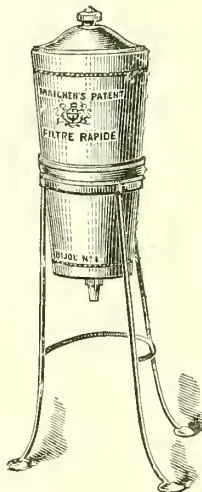
Tinned,  
 Copper.

Price from  
 50/.

Bijou A & C  
 Class.

All Earthen-  
 ware,  
 from 12/6.

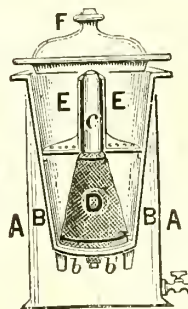
Class E.  
 Earthenware  
 and Wood,  
 from 30/.



These Filters do well and quickly what jelly bags and funnel filters do badly and slowly.

From THE CHEMIST AND DRUGGIST, March 15, 1882:—"The two chief objections to funnel-filtering are that the liquid finds its exit practically at the apex of the cone only, and that the filter is always liable to break. In Maignen's 'Filtre Rapide' these difficulties are perfectly provided against, and great speed is attained along with perfect filtration."

## MAIGNEN'S PATENT "FILTRE RAPIDE" FOR WATER.



Section of "Cottage"  
 "and Bijou D" Filtre  
 Rapide for Water.

These WATER Filters are entirely different from all other filters hitherto brought before the public.

They render the water filtered absolutely pure, and they can be easily and thoroughly cleansed by the users themselves.

They have been awarded the only medal ever given by the Sanitary Institute of Great Britain for filters, and have had the highest award at every exhibition at which they have been shown.



"BIJOU D."  
 For Water.

Full Prices and Particulars from the Patentee,

**P. A. MAIGNEN,**  
 22 & 23 Great Tower Street,  
 LONDON.



TO BOTTLEERS OF MINERAL WATERS AND AERATED DRINKS.

N. G. **“ECLIPSE”** for  
Wilcocks' 1882

UNEQUALLED AND UNRIVALLED  
TURNOVER FILLING MACHINE.

With Recent Improvements,  
FOR BOTTLING  
**£4 10s.** CODD'S, LAMONT'S, DISC,  
BARRETT & ELMERS', **£4 10s.**  
And all other Patent internally-  
stoppered Bottles.

THIS MACHINE HAS EARNED A WORLD-WIDE REPUTATION.  
ON COMPARISON WITH OTHERS IT IS PRE-EMINENT.

It has the most simple action . . . . .	Therefore is the least likely to get out of order.
It fills and syrups all internally stoppered bottles . . . . .	Small or large, and of any shape.
It is worked with marvellous rapidity . . . . .	The most ignorant person can work it at once.
It can be attached to any machine . . . . .	English, French, American, or any other.
It has no ground-in cocks, valves, or plugs . . . . .	All its parts are simply constructed.
It fills and syrups by one motion . . . . .	A boy or girl can work it.
It bottles drinks highly charged with gas . . . . .	With less pressure in the cylinder.
It therefore economises gas . . . . .	Its rapid action economises time.
Its simplicity economises labour . . . . .	Its cheapness economises cost.

We manufacture these Machines with massive castings, cast in our own foundry, which has always had a high local reputation for the superior castings turned out.

We always have a number of these Machines in process of manufacture.

We always have one at work bottling drinks for our workpeople only.

We are always glad to show the Machines to probable customers, in any stage and in action.

We have had hundreds of testimonials from parties who have purchased them.

We have never had one returned which we have sent out for a fortnight's trial.

We receive continually more and more orders for these Machines.

The **“ECLIPSE” FILLING MACHINE** is the best and cheapest in the market. It is sound and strong in every part, and the workmanship throughout is of the highest class. It soon saves its first cost by its rapidity. It saves gas, and cannot waste the syrup. The syrup pump is certain in its action. Can be adjusted with the greatest nicety from zero to two ounces. It will not syrup a bottle twice, and cannot miss once. One motion only required to throw the pump out of gear for bottling plain Soda or non-syrup drinks.

<b>“ECLIPSE” Filling Machine, to bolt to a Bench</b> . . . . .	<b>£4 10 0</b>
<b>Handsome Cast-iron Standard, extra</b> . . . . .	<b>add. 1 0 0</b>
<b>Syrup Pump</b> . . . . .	<b>3 0 0</b>
<b>Packed complete, as above, in extra strong, extra Iron-bound Packing Case for Export</b> . . . . .	<b>add. 0 15 0</b>

SOLE MAKER:

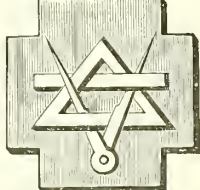
**N. G. WILCOCKS, SODA WATER MACHINIST, BACK STREET, BATH.**

# "VICTORIA" OFNER MINERAL BITTER-WATER.

THE BEST NATURAL APERIENT.

TRADE MARK.

As a safe, ordinary, and gentle aperient,  
In inflammation and congestion,  
In rheumatic and gouty disorders,  
Against undue tendency to fat,  
Against hæmorrhoids,  
In bilious attacks and disorders of the liver,



During pregnancy and in many female diseases,  
For habitual constipation,  
In Organic Diseases resulting from fatty degeneration,  
To remove the consequences resulting from excess in diet, &c.

The Proprietors of this Natural Spring of Laxative Water are desirous of bringing the leading features before the Medical Profession. The advantages specially claimed are, that it contains a larger amount of valuable active aperient solids than any other bitter water previously in vogue with the public, or prescribed by the faculty, and notwithstanding its rapid action as an aperient, it produces no uneasiness in its effects. It will be seen from the analytical data (below) of eminent Professional Chemists of England and the Continent, that this water contains nearly double the amount of Magnesia found in any other Bitter Water, hence it is entitled to be distinguished as a "SPECIFIC MAGNESIUM BITTER WATER."

Analysis of Prof. H. E. ROSCOE, F.R.S., Owens College, Manchester.	Special Analysis of Prof. M. BALLO, Chemist of the City of Budapest.	Analysis of Dr. G. L. ULEX, Official Chemist of the City of Hamburg.
---	---	---

MAGNESIUM SULPHATE ..	32.8107	..	32.3830	..	33.60
SODIUM SULPHATE ..	17.1693	..	20.9540	..	19.55
POTASSIUM SULPHATE ..	0.4407	..	0.3115	..	1.28
CALCIUM SULPHATE ..	2.3304	..	1.6020	..	1.33
SODIUM CHLORIDE ..	1.7708	..	2.2431	..	2.28
SODIUM CARBONATE ..	1.1884	..	0.4980	..	2.10
ALUMINA ..	0.0108	..	0.0229	..	0.3
SILICA ..	0.0587	..	0.0441	..	0.6
PHOSPHORIC ACID ..	Trace	..	Trace	..	Trace

SUMMARY OF TOTAL SOLUBLE	55.1798	..	58.0549	..	60.23
CONSTITUENTS ..	..	..	..	..	..
Do. Do. FOUND	55.7250	..	58.156	..	..
DIRECTLY ..	..	..	..	..	..
SPECIFIC GRAVITY AT 17°C.	1.0534 AT 17°C.	..	1.05362 AT 14°C.	..	1.055

Soluble Constituents and Sulphate of Magnesia in "Victoria Bitter Water," as compared with other Mineral Waters.

	Soluble Constituents.	Sulphate of Magnesia.
VICTORIA Bitter Water .....	55.77	32.87
Rákóczy .....	53.53	23.66
Franz Josef .....	52.29	24.78
Hunyady István .....	51.07	24.20
Hunyady János .....	41.73	18.44
Königsbitter quelle ..	37.55	16.68
Elisabeth .....	26.29	8.04
Püllner Bitterwasser ..	32.72	12.12
Friedrich haller .....	25.29	5.15
Saidschütz .....	23.21	10.96

Retail Prices:—Litres, 1/6 per bottle; Half-Litres, 1/- per bottle.

Cases are free and contain either 25 Litre Bottles or 50 Half-litre Bottles. May be obtained of any Chemist or Patent Medicine Vendor in the United Kingdom.

## THE "VICTORIA" NATURAL BITTERWASSER OF BUDAPEST, HUNGARY.

Wholesale Depot for England and Colonies:—24 & 25 Hart Street, Bloomsbury, London, W.C.

# HAY'S GINGER CHAMPAGNE

CAN BE OBTAINED FROM THE SOLE AGENTS,

INGRAM & ROYLE, 119 Queen Victoria Street, LONDON, E.C.,  
AND BATH BRIDGE, BRISTOL.

Retail Price, in Half Champagne Bottles, 5s. 6d. per dozen.

This SPARKLING, EXHILARATING, and REFRESHING DRINK, white being far more agreeable in bouquet and flavour than the FINEST CHAMPAGNE WINE, is, at the same time, unlike it, FREE from ALCOHOL.



It is strongly recommended both for Juveniles and Adults, &c., as the most Wholesome Stimulating Beverage that has hitherto been introduced, and should be in every household during all seasons of the year.

Samaritan Free Hospital, Lower Seymour Street,

Portman Square, London, W.

Dear Sir,—I have tried your Ginger Champagne, which I find to be excellent, and I look upon it as a step in the right direction towards meeting a long-felt want. Our Senior Physician, Dr. Henry Savage, has also tried it, and is much pleased with it. We ought long ago to have had such a beverage, and I believe that a great deal of drinking would thus have been prevented. I wish your effort much success.

I am, dear Sir, yours faithfully,

GEORGE SCUDAMORE, Secretary.

52 Montague Square, London, W.

Sir,—I am able to state that your Ginger Champagne is excellent and most refreshing. It will, I trust, supersede those cheap alcoholic drinks that meet us at many inns and railway stations, and which are often the only drinks to be had. In providing this beverage you have greatly assisted the cause of temperance, and I shall recommend it largely.

C. H. F. ROUTH, M.D.

19 Oxford Terrace, Hyde Park, London, W.

I have tried Hay's Ginger Champagne and like it extremely. I consider it is infinitely superior to the numerous non-alcoholic beverages now so largely advertised. It is an invigorating and refreshing tonic beverage, and, as such, I can confidently recommend it.

W. DOMETT STONE, M.D., Phys. Finsbury Dispensary.

An excellent and most agreeable beverage.—*The Lancet*.  
Made by Mr. Hay, of Hull, with his well-known SOLUBLE ESSENCE OF JAMAICA GINGER, takes rank as a PURE, WHOLESOME, STIMULATING, and NON-ALCOHOLIC beverage.—*British Medical Journal*.

One of the most delicate and wholesome drinks in the market.—*Medical Press*.

This is a beverage which the practitioner can safely recommend.—*Medical Times and Gazette*.

Mr. Hay, of Hull, deserves abundant success with his Ginger Champagne. It is an exhilarating, wholesome, and very agreeable beverage.—*The Chemist and Druggist*.

Sole Manufacturer, W. HAY, Chemist, &c., 4 Regent's Terrace, HULL.



# CHEMISTS' AERATED AND MINERAL WATERS ASSOCIATION (LIMITED).

Manufacturers of MINERAL WATERS IN GENERAL, AND ALSO THE SPECIALITIES.

**SPARKLING LIMINE.**

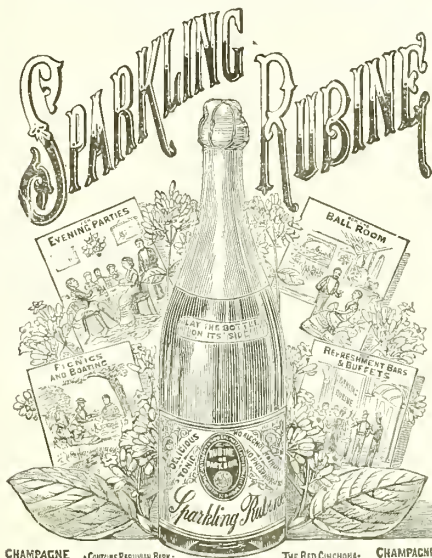
A Delicious Lime Fruit Beverage, Free from a Musty Flavour.



Of Chemists, 5/6 and 8/6 per dozen.

The ONLY PRIZE MEDAL AWARDED for Soda Potash, Lithia, &c., at the International Food Exhibition, London, 1881.

Contains no Iron, no Phosphorus, but FRUIT AND VEGETABLE PRODUCTS ONLY.



Of Chemists, 5/6 and 8/6 per dozen.

**SPARKLING RUBINE.**

THE WATERS BEING OF FIRST QUALITY, A TRIAL IS SOLICITED.

Offices and Factories—45 Gifford Street, and 112 Pembroke Street, Caledonian Road, London; and Harrogate.

## JEWSBURY & BROWN'S MANCHESTER MINERAL WATERS,

PURE SODA, SELTZER, POTASH, LITHIA, &c.,  
LEMONADE,  
GINGER ALE, AND QUININE TONIC.

Prepared and Bottled specially for Export, and warranted to keep well.

Manufactured with the utmost care and by improved machinery, these productions are recommended for purity and excellence of quality by many leading members of the Medical Profession, and have for many years had a preference by the public; the flavour of the Lemonade and Ginger Ale being procured from the fresh Fruit and Finest Jamaica Ginger, they may be relied upon as furnishing delicious and satisfactory beverages, either for general use or specially for invalids.

The Soda Water is absolutely free from any metallic impregnation, and being by improved machinery highly charged with Carbonic Acid Gas, and each bottle containing a definite and unvarying proportion of Pure Carbonate of Soda, J. & B. have every confidence in inviting a trial from those who have not already patronised them.

The Seltzer, Potash, and Lithia Waters are prepared with the utmost exactitude and the purest ingredients.

The New Quinine Tonic furnishes a pleasant form for the administration of a most valuable restorative, and is refreshing and agreeable.

Ginger Ale (Aromatic) of superior quality, and strongly recommended as a Non-Alcoholic and warm stimulant beverage.

N.B.—Every Bottle is protected by a distinctive Label, with Name and Trade Mark, and each Cork is branded.

Counter Bills and Analytical Reports, with Agents' Names and Addresses, supplied when requested.

A CERTIFICATE OF MERIT, for superiority of quality, was awarded to Jewsbury & Brown at the Exhibition of Sanitary Appliances, at Owens College, Manchester, on the occasion of the Meeting of the British Medical Association, August, 1877.

A CERTIFICATE OF MERIT awarded by the British Sanitary Institute of Great Britain, after a deferred PRACTICAL TRIAL AND EXAMINATION, July 4th, 1879.

JEWSBURY & BROWN, 44 Downing Street, 3 Grosvenor Street, and 113 Market Street, MANCHESTER.

# THE HOLYWELL NON-ALCOHOLIC FRUIT CHAMPAGNES.

These delicious beverages are guaranteed prepared from fruit only, no essences or any compounds whatever being used, and are entirely free of spirit.

They combine in a high degree all the refreshing, nutritive, and other properties of their respective fruits, producing delicious, cooling, and re-freshing beverages for family use, suitable for ball-room or supper party.

They embrace the Grape, Citron, Lime, Lemon, Orange, Cherry, Raspberry, Strawberry, Pineapple, &c. No more delicious beverages are obtainable from fruit.

They are bottled in Champagne Bottles, French style, elegantly labelled, and are about one-tenth the cost of French Wines.

Sample assorted One-dozen Case may be obtained, carriage paid, with full particulars, by trade buyers, on remittance of 6s. 6d. to

## MESSRS. CAMERON & CO.,

HOLYWELL FRUIT CHAMPAGNE WORKS,

HOLYWELL ROW, FINSBURY, LONDON.

## Caution

W. A. ROSS, the Original Patentee and Maker of The Celebrated Belfast Ginger Ale, cautions the Public that the "GENUINE" can only be had at

*Ross's Royal Ginger Ale*  
AND  
*Aerated Water Works Belfast.*

NAME ON CORK, CAPSULE, AND LABEL REGISTERED.

EXPORT ORDERS HAVE SPECIAL ATTENTION.

## BINGLEY'S



ANALYSED

MANUFACTURED BY

JOHN BINGLEY, Pharmaceutical Chemist,  
NORTHAMPTON.

*A copy of Professor Attfield's Report will be forwarded by post on application.*

SODA WATER.  
SELTZER.  
POTASH.  
LEMONADE.  
LITHIA, &c.

# EAU DE VALS SOURCE PAULINE.

The Best and Cheapest of the Vals Mineral Waters.

## AN EXCELLENT TABLE WATER FOR WEAK STOMACHS.

To be had at all first-class Chemists, Druggists, Wine Merchants, Restaurants, and Hotels.

WHOLESALE AGENTS IN ENGLAND:

Messrs. INGRAM & ROYLE, 119 Queen Victoria Street, LONDON, E.C.

Messrs. W. BEST & SONS, 22 Henrietta Street, Cavendish Square, LONDON, W.

## FOREIGN MINERAL WATERS.

FREDERICKSHALL (5 Cases, 6d. per Case less), 24/6 Case, 30 bot.; 34/ Case, 60 1/2-bot.

APOLLINARIS WATER, 25/- Hpr., 50 bts.

" 39/- Hpr., 100 1/2-bts.

Hampers free.

5 per cent. discount if 20 Hampers.

HUNYADI JANOS (10 Cases, 3/- and 5/- less), 30/- Case, 25 bts.; 50/- Case, 50 1/2-bts.

SELTZER ... 11/- Hpr., 25 bts.

" 15/- Hpr., 50 1/2-bts.

PULNA ... 18/- Case, 70 bts.

" 30/- Case, 50 1/2-bts.

VICHY ... 31/- " 50 bts.

" 37/- " 50 1/2-bts.

CARLSBAD ... 37/- " 50 bts.

KISSENGEN ... 42/6 " 50 "

SCHWALLBACH ... 27/6 " 50 "

HOMBURG ... 37/6 " 50 "

WILDUNGEN ... 40/- " 50 "

CARLSBAD SALTS, 1-Bots., 20/- per doz.; 1/2-Bots., 40/- per doz.; Bot., 50/- per doz.



REGISTERED AT STATIONERS' HALL.

## NORWAY BLOCK ICE.

Packing and Mats for Original Blocks free; 3d. each allowed for Mats if returned.

PRINTED DIRECTIONS for STORING  
ICE sent free on application.

**W. B. HARRISON,**  
IMPORTER OF ICE AND  
MINERAL WATERS,  
6 Bridge Street, Sunderland.



# W. J. BUSH & CO.,

Distillers and Importers of

## ESSENTIAL OILS AND FRUIT ESSENCES,

SOLUBLE ESSENCES FOR AERATED WATER,  
AND CORDIAL MANUFACTURERS,

Extra Super Lemon, which is double the strength of ordinary commercial qualities.

W. J. B. & CO. CAUTION the Trade against the so-called soluble Essences now so frequently offered for sale, which are nothing more than mere tinctures, and, although offered at lower prices, cost five or six times as much in use, whilst imparting a strong medicated flavour.

**NONE OTHERS ARE GENUINE.**

## FRENCH CREAM GUM EXTRACT.

PROTECTED BY ROYAL LETTERS PATENT.

*For producing a head of Creamy Richness upon all kinds of Syrups, Aerated Waters, Beers, Ales, Cider, Champagne, &c., 2s. 6d. per pound.*

W. J. BUSH & CO. regret having to CAUTION the Trade against spurious imitations of this article, most of which being mere rubbish.

**W. J. BUSH & CO.,**

20 to 23 Artillery Lane, London. Works—Ash Grove, Hackney.

## FRUIT COMPOUNDS,

*Lemon, Orange, Raspberry, Strawberry,  
Pear, Pine Apple, and Ginger,*

FOR THE MANUFACTURE OF

## FRUIT CHAMPAGNES,

PATENTED BY

Messrs. BARNETT & FOSTER,

FORSTON STREET, HOXTON, LONDON,

*And Manufactured solely for the Patentees by*

**W. J. BUSH & CO.,**

20 to 23 ARTILLERY LANE, BISHOPSGATE, LONDON.

Packed in 1, 2, and 5 lb. bottles.

Price, 4s. 6d. per lb. net, including bottle.



LESLIE & SON,  
PORT ELIZABETH.

Full particulars as regards cost of licence, machinery, &c., for the manufacture of above, may be had on application to Messrs. Barnett & Foster, or

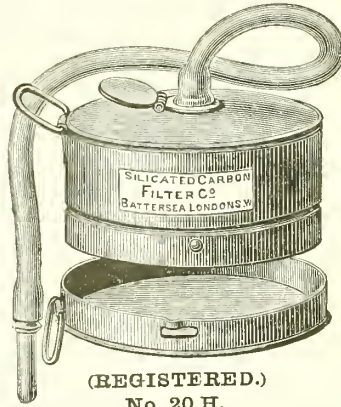
W. J. BUSH & CO., 20-23 Artillery Lane, Bishopsgate, London, E.

# NOVELTY.

## SILICATED CARBON POCKET FILTER,

IN GERMAN SILVER, NICKEL-PLATED.  
**Retailed at FIVE SHILLINGS each.**

Designed by  
**MAJOR FRASER,**  
 of the  
**ROYAL ENGINEERS,**  
 especially  
 for Officers' Kits.  
 Weighs only 8 ounces.



(REGISTERED.)  
 No. 20 H.

It has been approved  
 by the  
 Authorities at the  
 Horse Guards, and has  
 been largely used  
 in the Afghan, Zulu, and  
 Egyptian Expeditions.

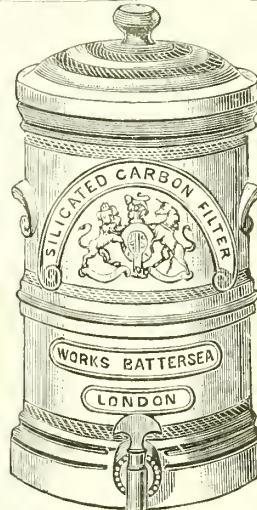
Sample sent free by Post on receipt of **FOUR SHILLINGS.**

## DOMESTIC

## FILTER, NO. 27.

Made in cream-coloured Stone-ware, fitted with the Silicated Carbon Media, complete with Cover and Silver-plated Tap.

All sizes of this pattern can now be had with Ice Compartment, which renders this Filter the most perfect of Refrigerators.



### PRICES.

				With Ice Compartment.
No. O, capacity $\frac{1}{2}$ gallon		10s. 6d.		
No. A, " 1 "		14s. 6d.	...	17s. 6d.
No. B, " 2 "		21s. 0d.	...	25s. 0d.
No. C, " 4 "		32s. 0d.	...	36s. 0d.
No. D, " 6 "		42s. 0d.	...	48s. 0d.
No. E, " 8 "		52s. 0d.	...	60s. 0d.
No. F, " 12 "		70s. 0d.	...	80s. 0d.

## MAIN SUPPLY FILTER, NO. 40.

**SPECIALLY ADAPTED FOR**  
**Mansions, Schools, Hospitals, Public**  
**Institutions, Breweries, Distilleries,**  
**Soda Water Manufactories,**  
**Dye Works,**

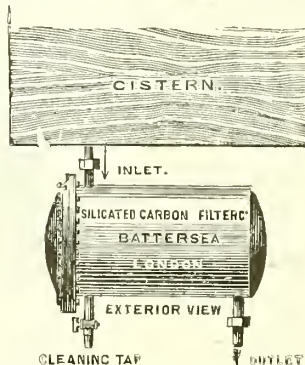
And all other Establishments where large quantities of

### PURE WATER

Are required.

The ordinary Sizes kept in Stock are as follows:—

- A,  $\frac{1}{2}$ -inch or  $\frac{3}{4}$ -inch pipe .. .. £6 6s.
- B 1-inch pipe .. .. £9 9s.
- C,  $1\frac{1}{2}$ -inch,  $1\frac{3}{4}$ -inch pipe .. .. £15 15s.
- D, 2-inch pipe .. .. £26 5s.



This Filter is extremely simple in construction, and can be either connected with a Cistern or attached to the Main Service Pipe. It requires no attention beyond an occasional opening of the Cleansing Tap, and will deliver a supply of purified water at a rate of 50 to 1,000 gallons per hour, according to size.

**Special Contracts entered into**  
**for Large Works, Institutions,**  
**&c., &c.,**

**FOR PURIFYING THE WHOLE OF THE WATER SUPPLY OF A BUILDING BEFORE USE.**  
*Ensuring Rapid and Perfect Filtration, at either High or Low Pressure.*

**SILICATED CARBON FILTER CO., CHURCH ROAD, BATTERSEA, LONDON.**



# SILICATED CARBON FILTERS.

## SYPHON FILTERS FOR TRAVELLERS.

By means of these Filters pure and perfectly wholesome water may be drunk from any pond or stream by simply immersing the Filter therein and drawing the water through the tube by suction.

Each of these portable Filters may be



No. 20.

used as a Syphon by placing it in a vessel of water, then drawing the water by the mouth, and allowing the flexible tube to hang over the side below the Filter. When once set in operation their action is continuous.

They are readily cleaned from sedimentary matter by merely blowing through the tube, and brushing the surface of the filtering medium.

- A.—Pocket Filter, 2½ inches diameter, in porcelain, with glass s. d.  
mouthpiece, in decorated metal box .. .. . 2 6  
B.—Ditto, 3½ inches diameter, in best stoneware .. .. . 5 0  
Ditto, " " with silver-plated tap 7 0  
C.—Emigrant's, 5 inches diameter, with silver-plated tap .. .. . 12 0  
D.—Pocket Filter, for carrying over shoulder, as supplied to the  
Forces in Abyssinia and Zululand, and to the Ashantee  
and Egyptian Expeditions .. .. . 3 6  
E.—Ditto, nickel-plated, designed by Major Fraser, R.E., and specially  
recommended by the Horse Guards for Officers' kits .. .. . 5 0

## TABLE FILTER, NO. 24.

Made of stout glass, in 1, 2, and 3 pint sizes, the filtering medium being securely fitted into the bell-funnel, so that it is not liable to become loose, or to allow unfiltered water



to pass. This Filter is peculiarly suited for the Bedroom and for Table use, affording a ready and simple means of obtaining at any time freshly-purified water.

### PRICES.

O, 2s. 6d.; A, 4s.; B, 5s. 6d.  
Engraved Vine Pattern—O, 3s. 6d.; A, 5s. 6d.; B, 7s. 6d.

## POROUS TERRA COTTA FILTER, NO. 29

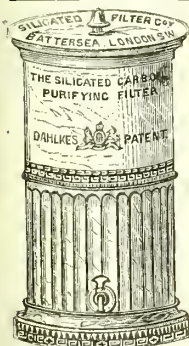
Shape of this Filter as Fig. No. 24.

O, 2s. 6d.; A, 4s.; B, 5s. 6d.

## SILICATED CARBON BLOCKS.

2 in., 1s. 6d.; 2½ in., 2s. 6d.; 2¾ in., 3s.; 3½ in., 4s.; 4¾ in., 5s. 6d. ea.

SPECIAL QUOTATIONS FOR QUANTITIES.



## DINING-ROOM FILTER, No. 22.

MADE IN MARBLED CHINA.

Size A holds about two gallons; size B, five gallons.

### PRICES.

- A .. .. . 35s.  
B .. .. . 80s.  
A, with Ice Compartment .. .. . 42s.  
(New Patent.)  
B, with Ice Compartment .. .. . 100s.  
(New Patent.)

The large size (B) is specially adapted for Hotels, Refreshment Rooms, Luncheon Bars, &c.

## REFRIGERATOR FILTER, NO. 25.

Made in Porous Terra-Cotta Ware,

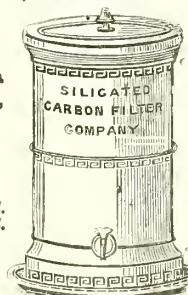
Which acts with remarkable power as a cooler, and renders this Filter invaluable, especially in Tropical Climates,

AFFORDING A

COOL DRAUGHT OF PURE WATER.

- Price, with Silver-plated Tap .. .. . 31s. 6d.  
Ditto, ditto, with Ice Compartment .. .. . 42s. 0d.  
Capacity Two Gallons.

Specially adapted for Tropical Climates.



# SILICATED CARBON (Regd.) ASCENSION FILTERS.

The most efficient known Filter

### PRICES:

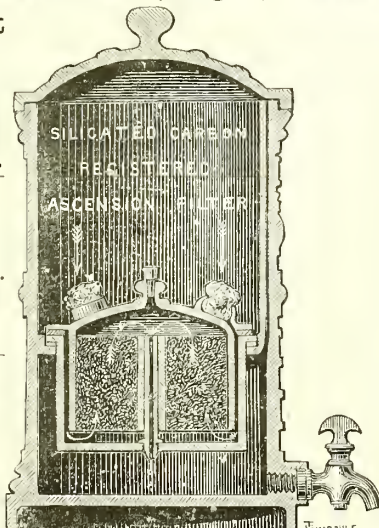
No. 38.

- 1 Pint, 2/6 ea.  
2 " 4/-  
3 " 5/6

The Water passes upwards through the Silicated Carbon in the direction shown by the Arrows in the Drawings.



NO. 38.



NO. 37.

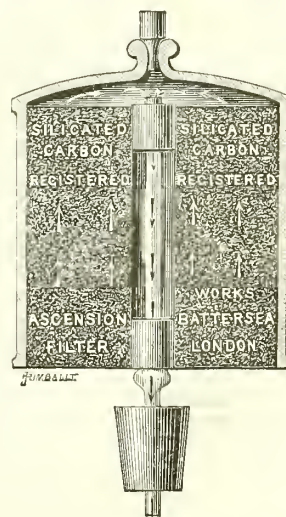
for Table and Domestic Use.

### PRICES:

No. 37.

- 1 Gal., 18/- ea.  
2 " 26/-  
4 " 38/-

The inner blocks being movable, by attaching an indiarubber tube they can be converted into Pocket or Travelling Filters.



SECTION OF NO. 38.

WRITE FOR FULL LISTS TO THE

SILICATED CARBON FILTER CO., CHURCH ROAD, BATTERSEA, LONDON.

# Hunyadi János

**CAUTION.**—Circumstances which have come to the knowledge of Andreas Saxlehner, Buda Pest, Sole Proprietor of the Hunyadi János Spring, compel him to WARN the British Public against SPURIOUS IMITATIONS. To secure genuineness, purchasers should see that every bottle has on the LABEL the name of "THE APOLLINARIS COMPANY (LIMITED), London."

## LAMPLOUGH'S EFFERVESCENT PYRETIC SALINE.



**HAVE IT IN YOUR HOUSES AND TRAVELS, USING NO OTHER SALINE;** it gives instant relief in Headaches, Sea or Bilious Sickness, and quickly cures the worst form of Eruptive or Skin Complaints. The various diseases arising from Constipation, the Liver, or Blood Impurities, Inoculation, the results of breathing air infected with Fevers, Measles, or Smallpox, are frequently prevented and certainly cured by its use.

The sale of these Saline Salts having greatly increased during the past few years, I beg most cordially to thank those who sell and recommend the same, and also to inform intending dealers that they will find Messrs. BARCLAY, EDWARDS, MAW, NEWBERRY, SANGER, SUTTON, and the Wholesale Houses generally, ready to supply their wants. This Advertisement is found needful in consequence of the trouble, cost, and inconvenience in the keeping and collection of numerous small accounts. *Note.*—The Name, Trade Mark, Labels, Wrappers, &c., are all Registered and Entered at Stationers' Hall.

**SPECIAL NOTICE.**—Medical Gentlemen having fever cases, and desirous of trying the Saline, can have a single bottle at wholesale prices by sending their cards.

## GROCEER VERSUS CHEMIST.

"The Chemist will not be mortified by his neighbour the Grocer offering the **SHELFANGER** at a lower price than himself, as no Agent are employed by the Proprietor."—Editor of THE CHEMIST AND DRUGGIST.

**TERMS.**—Railway carriage paid; 4s. per dozen in quarterly account, 5 per cent. discount on cash with order. RETAIL PRICE, 5s. per dozen Half Pints, inclusive of bottles. Cases to be returned: 8d. per dozen allowed for empty bottles.

This delightful Effervescent Antacid and Tonic Table Water can only be obtained direct from the Spring, **SHELFANGER, DISS** in Cases of 3 dozen Half pint Bottles.

"The Shelfanger Constitutional Water, or Natural Mineral Water of Shelfanger" (Entered at Stationers' Hall), is no ordinary Foreign Table Water, but a *Constitutional Table Water*, of genuine English Origin, and one which, from its "special interest and peculiarity of composition," according to Professor TICHBORNE, Analyst, of Ireland, and its "value as an Antacid and Chalybeate," according to Professor ATTFIELD, Analyst, of England, justifies its position as THE CONSTITUTIONAL TABLE WATER.

## JOHN MACKAY & CO., CANNING STREET, EDINBURGH

MANUFACTURERS OF

## GRANULAR EFFERVESCENT CITRATE OF MAGNESIA AND ALL OTHER GRANULAR PREPARATIONS.

SAMPLES AND QUOTATIONS FORWARDED ON APPLICATION.

SPECIAL TERMS TO LARGE BUYERS.

Price 5s., post free.

### "AERATED WATERS AND HOW TO MAKE THEM."

With Receipts for Non-Exciseable Cordials, American and other Syrups, and an Essay on the Art of Flavouring; by JOSEPH GOOLD.  
An invaluable handbook for the high-class manufacturer.

J. GILBERT SMITH, Publisher, 141 Queen Victoria Street, E.C.

### T. & F. J. TAYLOR'S AERATED WATERS, Newport Pagnel.



ESTABLISHED 1835.

SODA, POTASH, SELTZER, AERATED (without Alkali), and LITHIA WATERS, LEMONADE AND GINGER ALE.

Each Bottle is protected by a Label bearing the Signature of the Firm.

Purity and Excellence of the Water certified by Analysis by Professor ATTFIELD, Ph.D., F.C.S.

## BOURNE WATER.

THE PUREST IN ENGLAND.

### R. M. MILLS & CO., BOURNE, LINCOLNSHIRE,

Manufacture all kinds of Aerated Waters from the celebrated Artesian Spring.

Dr. ANDERSON'S Tissue Phosphate Tonic Water an Aerated Tonic Beverage containing all the Mineral Elements of Nutrition (no Iron), and assisting Digestion in most marvellous degree.

SOLD BY THEIR AGENTS THROUGHOUT ENGLAND. PRICE WITH DESCRIPTIVE PAMPHLETS, UPON APPLICATION.

SPECIAL AGENTS IN LONDON—

Messrs. INGRAM & ROYLE, Victoria Street, and Messrs. HARDY & Co., 42 Fenchurch Street.



ESTABLISHED 1843.

**THOMPSON & CAPPER,**

WHOLESALE AND EXPORT

HOMŒOPATHIC CHEMISTS,

55 Bold St., Liverpool,

And (late HENRY TURNER &amp; CO.)

51 Piccadilly, Manchester,

ILLUSTRATED PRICE LIST ON APPLICATION.

THOMPSON & CAPPER have now for many years, with the greatest benefit to their Agents throughout the world, supplied, *free of cost*, Books for Gratuitous Distribution, compiled by themselves, containing complete directions for using the Homœopathic Medicines, a plentiful distribution of which invariably ensures a large sale. Handbills also, with name, *ad lib*.

**THOMPSON & CAPPER'S  
DENTIFRICE WATER.**

Sells well everywhere, its beneficent qualities being attested to by physicians in all parts of the world. (See Testimonials.)

In 1s. 6d., 2s. 6d., 4s. 6d., and 8s. 6d. Bottles.

IN THE PRESS.

THIRD EDITION. REVISED AND ENLARGED.

THE

**British Homœopathic  
Pharmacopœia,**

PUBLISHED FOR THE

**BRITISH HOMŒOPATHIC SOCIETY**

BY

**E. GOULD & SON,**

HOMŒOPATHIC CHEMISTS

AND

MEDICAL PUBLISHERS,

59 MOORGATE ST., LONDON, E.C.

PRICE LISTS OF MEDICINES, MEDICINE CHESTS, &amp;c.,

POST FREE TO ANY PART OF THE WORLD.

TRADE

L. B.

MARK.

**LARS BREKKE & CO.,**

5 MINERVA TERRACE, HULL

(BRANCH OFFICE OF LARS BREKKE, AALESUND, NORWAY),

Recommend SUPERIOR NON-FREEZING

**COD LIVER OIL,**

In 25 and 12 gallon Tin Casks, at the very lowest prices, free on rail Hull, or c.i.f. any principal Port of United Kingdom.

WHOLESALE ONLY.

SAMPLES AND QUOTATIONS ON APPLICATION.

**UMNEY'S**

At Medical International Congress, London, the Indian Bark was declared to be the Bark of the future.

Extensively used in private and Hospital practice, on account of its ELEGANCE, MEDICINAL VALUE, and MODERATE COST.

**FLUID EXTRACT**

Price 10s. 6d. per lb.

To be obtained of all Druggists (Wholesale and Retail) in the United Kingdom.

In ordering, specify "UMNEY'S."

*Lancet*—"An excellent preparation; contains all the alkaloïds of the Bark."*Medical Times and Gazette*—"An excellent, elegant, reliable, and very convenient preparation.*Medical Press and Circular*—"Used in hospital and private practice with the most satisfactory results."*Pharmaceutical Journal*—"Excellent preparation, furnishing the constituents of a concentrated form."*Chemist and Druggist*—"Pharmaceutically worthy of the valuable medicine which it represents."

Made from Bark of *Cinchona Succirubra*, as grown in Government Plantations of British India.

See opinions of Medical and Pharmaceutical Press, and testimony as to its superiority over all other Fluid Preparations of Cinchona.

OF

**WRIGHT, LAYMAN & UMNEY,**  
SOUTHWARK, LONDON, S.E.
**CINCHONA.**



# W. H. BAILEY & SON,

## 38 (late 16) OXFORD ST., LONDON,

Six doors from Hanway Street.

ESTABLISHED A.D. 1833.



FIRST PRIZE (SILVER MEDAL) FOR TRUSSES AWARDED BY THE  
WORSHIPFUL COMPANY OF CUTLERS OF THE CITY OF LONDON, MAY, 1879.

FIG. 1.

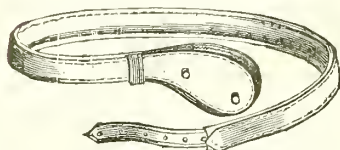


FIG. 4.

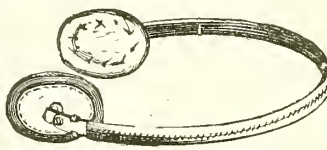
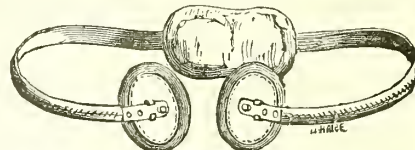


FIG. 5.

**TRUSSES.**

Circular Trusses, single, as Fig. 1, basil and chamois or basil and moleskin	per doz.	£1 1 0
Circular Trusses, double, basil and chamois or basil and moleskin	per doz.	1 14 0
" " " " with extending backs	"	2 14 0
Salmon & Ody's Expired Patent, single, Fig. 4	"	1 10 0
" " " " double, Fig. 5	"	3 0 0
Moc Main Lever, single	each	0 8 0
" " " " double	"	0 13 6
Coles's Expired Patent, single	"	0 6 0
" " " " double	"	0 12 0
Scrotal Trusses, basil and chamois or moleskin, single	"	0 4 0
" " " " double	"	0 7 0

**SUSPENSORY BANDAGES.**

No.		
1. Cotton Bags and tape under-straps	per doz.	£) 8 0
2. Cotton Oxonian, with drawing-strings	"	0 10 0
3. Silk Bags and tape under-straps	"	1 1 0
4. Silk Oxonian, with drawing-strings	"	0 18 0
5. Silk Oxonian Bags bound with elastic	per doz.	1 4 0

**SUSPENSORY BANDAGES—continued.**

No.		
6. Silk Oxonian, superior quality, bands of buff jean, with drawing-strings	per doz.	£1 4 0
7. Silk Bags, to button on, with tape under-straps	"	1 1 0
8. " " " " under-straps to button	"	1 4 0

**ELASTIC STOCKINGS, KNEE-CAPS, ETC.**

Manufactured expressly for  
Export, and warranted to stand a  
hot climate better than any others  
in the Market.

	Silk.	Super. Silk.	Cotton.	Super. Cotton.
Stockings .. .. per pair	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Knee-caps .. ..	0 9 6	0 14 2	0 5 6	0 6 10
Knee-caps .. ..	0 6 6	0 10 0	0 3 8	0 5 3
Calf-pieces .. ..	0 7 0	0 9 6	0 4 4	0 5 9
Socks .. ..	0 5 6	0 8 0	0 3 6	0 4 9
Wristbands .. ..	0 2 2	—	0 1 6	0 2 1
Knee Stockings .. ..	0 16 0	1 4 2	0 9 2	0 12 1
Belts, to draw on .. .. each	0 16 6	—	—	0 12 0

The above may be obtained direct from the Manufacturers, or from their Wholesale and Export Agents,  
Messrs. Barclay & Sons, 95 Farringdon Street.

# COLTHURST & HARDING,

PHENIX COLOUR WORKS, BRISTOL,

Also Petroleum and Benzoline Stores at Gloucester,

MANUFACTURERS OF

# WHITE LEAD, PAINTS, AND COLOURS

Also VARNISHES of every Description

For Painters, Coachbuilders, and Japanners,

packed in Casks and Tins of all sizes.

## PAINTS IN TINS

## MIXED FOR USE.

TRADE  
Ball denotes

MARK.  
Colour of Paint.

All Colours in 1, 2, 4, 7, and 14 lbs.

All Colours in 1, 2, 4, 7, and 14 lbs.

SOFT SOAP, GREASES, LINSEED

MEAL, AND CRUSHED LINSEED.

IMPORTERS OF

Petroleum, Benzoline, Gasoline, Turpentine, Olive, Colza, Cod, Castor, Seal, Whale, and Sperm  
Oils; Tallow, Pitch, Rosin, &c., &c. Sole Proprietors of the

# CELEBRATED ELECTRIC LIGHT OIL

The most beautiful and perfect Illuminator.

OIL REFINERS AND DRY-SALTERS.





## NEW GOODS

## Special Notice to the Trade

We beg to notify that the Proprietors of Lundborg's Perfumes have appointed us their Sole European Agents.

The LUNDBORG'S PERFUMES have gained such popular favour in other countries that we anticipate for them an equal appreciation in the United Kingdom by people of refinement and good taste

## OTHER ODOURS--

MARECHAL NIEL ROSE	2 oz. Bots., 33s. per doz.
EDENIA .. ..	1 oz. Bots., 21s. per doz.
FASCINATION	



1 oz. Bots., 21s. per doz.

In America these goods occupy pre-eminently the first rank for quality above any foreign perfumes.

For Delicacy, Richness, and Permanency Lundborg's Extracts certainly have no equal.

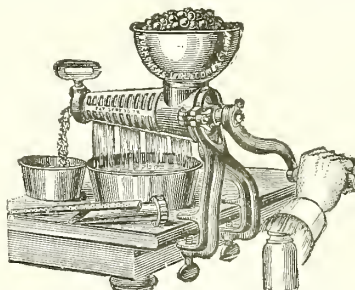
The rare excellence of quality, combined with the elegant and tasteful style in which they are put up, renders them at once attractive and readily saleable.

As novelties in this market, the trade will, we believe, be glad to introduce them, as they yield a good profit and do credit to the introducer.

## THE ENTERPRISE TINCTURE PRESS.

*Specially adapted for Coarse and Fibrous Drugs.*

The principle upon which the Press operates is, that the drug is acted upon in a continuous thin layer which is forced forward by each revolution of the screw into smaller and smaller space, the leverage yielding a force so powerful as to extract almost the entire moisture, delivering the residue of suitable drugs with almost crisp dryness, and, as experience has shown, it saves a greater amount of Tincture (very important in the case of Tincture of Opium and other expensive drugs) than even the most powerful Hydraulic Press. So



thorough is its action in this respect that the *Chemists' Journal* has humourously remarked of it that "it will almost squeeze blood out of a turnip." One firm informs us that they have saved at least £20 more in three months, by the use of this Press, than they could secure by using any other. The working of this Press being continuous, either small or very large quantities may be operated upon at one time, and much more rapidly than in any other form of apparatus.

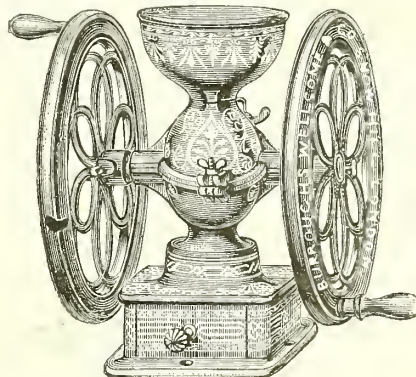
The fact that drugs require handling but once, that the use of press cloths is done away with, and that the operation is continuous, shows a great advantage in this Press over any other.

*Price 15 shillings subject to the usual discount. Obtainable from every Wholesale Druggist.*

## THE ENTERPRISE DRUG MILL.

Constructed on an improved principle, the cutters being easily removable for inspection, or for cleaning. It may be regulated to grind to any degree of fineness or coarseness, by simply turning a single thumbscrew. It is adapted to almost any dry pulverizable substance; it works rapidly and is economical.

Professor Maisch, one of the highest American authorities on pharmacy, says that "It is the best drug mill that has yet been devised. It is intended to displace the use of the mortar for general purposes in pulverizing drugs."



Prices { Plain .. 40s., 60s., 100s. } each.  
Ornamented 50s., 70s., 110s. }  
*Subject to the usual Discount for Cash.*

All of the Articles mentioned above may be obtained from any respectable wholesale firm, or from BURROUGHS, WELLCOME & CO., of 7 SNOW HILL, LONDON, E.C., the sole European Depôt.

# NEW HONEY (ENGLISH AND FOREIGN).

## ENGLISH HONEY, 1882.

The new English Honey is just ready. The season has been almost a failure on account of the continued wet weather. We have potted the Honey in the New Shaped Jars, which are fit for the table, price 1s. 2d. per lb., including Jars.

## NORMANDY HONEY, 1882.

The flavour and general character of this fine French product is becoming more and more appreciated. We have potted it this season in the same jar as we used last year, the design of which is new, and specially suited for the table. The yield has been fairly good, and the price is consequently moderate.

We supply it in one cwt. Original Casks, casks free, 104s. cwt., and in the New Jars, each containing 1 lb., 2 lb., 3 lb. and 4 lb., at 1s. 1d. lb., Jars included; and in some of the old style of Jars, holding  $\frac{1}{2}$  lb., price 1s. 1d. per lb.

**SOUTHALL BROS. & BARCLAY, IMPORTERS, BIRMINGHAM.**

# DRAPER'S INK (DICHROIC)

THE NEW BLACK INK, different from anything else ever produced. Writing becomes a pleasure when this Ink is used. It has been adopted by the principal Banks, Public Offices, and Railway Companies throughout Ireland.

It writes almost instantly full black.  
Does not corrode Steel Pens.  
Dries rapidly on the Paper.  
Is cleanly to use, and not liable to blot.

Flows easily from the Pen.

Blotting-paper may be applied at the moment of writing.

In Jars, 6d., 1s., and 2s. each.

Can be obtained, in London, through Messrs. BARCLAY and SONS, Farringdon Street; W. EDWARDS & SON, 157 Queen Victoria Street, London, E.C.; F. NEWBURY and SON, Newgate Street; S. MAW, SON, and THOMPSON, Aldersgate Street; AYRTON and SAUNDERS, Duke Street, Liverpool; and GOODALL, BACKHOUSE & CO., Leeds; HAYDEN & CO., 10 Warwick Square, Paternoster Row, London; JNO. HEYWOOD, John Dalton Street, Manchester; JAMES HEMINGTON, 6 Moor Street, Birmingham; HENRI HODDER, Broad Street, Bristol.

**BEWLEY & DRAPER, Limited, DUBLIN.**

See "CHEMIST AND DRUGGIST," December 15th, 1874.

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Dose, 3 to 5 grains, in water, milk, wine, arrowroot, &c., &c.

## PANCREATINE WINE.

An excellent vehicle for taking Cod-liver Oil, and promoting the digestion of it. Dose, 1 drachm.

## PEPSINE PORCI AND WINE.

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Supplied in bulk or small bottles.

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THE CHEMISTS AND DRUGGISTS' DIARY for 1883, which is now in course of preparation, will contain material which, we believe, will render it as useful and popular as any of its predecessors, and several of our recent issues have been cleared out before the end of January. It will be, as usual, presented to all our subscribers, both in England and abroad. Firms who propose to insert an advertisement in this annual are requested to give us early notice.

**JURY LISTS.**—On the first three Sundays in September the Jury Lists are suspended on the church doors. All pharmaceutical chemists and dentists can claim exemption, and should take the precaution of looking to see if their names are on the list. If they are, immediate steps should be taken for their removal by appeal to the Petty Sessions held within the last seven days of September. This is the only way of avoiding future trouble. Except the classes named all chemists are liable to serve on juries unless they are aliens, felons, or outlaws.

**PATENT MEDICINE LICENCE.**—This is renewable on September 1. It costs 5s., and one licence is sufficient for any number of shops kept by the same person if due notice is given thereof when the licence is taken.

The Inland Revenue Commissioners have issued halfpenny and penny stamps for use on packets of "vegetable substances other than coffee or chicory, intended to be used as coffee or chicory." The halfpenny stamps are for ¼-lb. packets. These stamps are supplied in sheets of 40 each. Chemists who have any mixture in stock which is liable to

this duty should be careful to at once obtain the necessary stamps and affix them. All stamps must be so affixed that they are wholly or partially visible, and that the package cannot be opened without destroying them. The following order is also important to be observed:—

Every packet containing, or purporting to contain, coffee with any other article or substance mixed therewith, shall have affixed thereto a label denoting in letters of not less size than the largest letters affixed to, or imprinted on, such label, the proper names of the several articles of which such mixture is composed. The label denoting the ingredients of the mixture must be provided by the trader himself.

A penalty of 20l. is incurred by anyone selling or keeping ready for sale packets of such mixtures not stamped and labelled in conformity with the above directions. Coffee and chicory themselves or mixtures thereof are not subject to these regulations, but the addition of any substance in any proportion renders it necessary that the foregoing instructions should be observed.

Anticipating the introduction of the parcels post by the Post Office, the railway companies and the present parcels delivery companies have assumed new vigour. It seems likely they will leave to Mr. Fawcett the not attractive portion of the business, namely, the delivery of parcels in remote villages, retaining for themselves the more profitable business of delivering in populous towns. The Globe Company, too, have announced their intention of adopting the American system of "C O D"—that is, collects cash on delivery.

Mr. Ince's address to students at the School of Pharmacy, Bloomsbury Square, will be delivered on October 4, at 8 P.M.

The Pharmaceutical Council did not hold any meeting this month.

The present issue contains a report, as complete as our space will admit, of the meeting of the British Pharmaceutical Conference at Southampton. That report includes much interesting and important matter. The meeting was rather below the average of recent years in point of attendance, but the members present seem to have had a very agreeable visit. It is not yet decided where the Conference will meet next year, but as the British Association have decided on Southport as their place of meeting, it is likely the Conference will assemble there also.

The session for students in pharmacy, medicine, and science generally being about to commence, we have collected for this number, in accordance with our usual custom, a quantity of information relating thereto. Much other information may be obtained from the educational section of our advertisements.

The Executive Committee of the British Pharmaceutical Conference are rather too well satisfied with the results of their work. They have obtained an extensive membership, they produce a valuable Year-book, and they turn out excellent literary and scientific work. But they have not yet succeeded in bringing together to their meetings anything approaching a representative gathering of British pharmacists. That was one of the main objects of the founders of the Conference, and some little attention might be directed to this failure. We have always believed that a much larger number of chemists would attend the meetings if a proper price for the entertainments provided were charged. The great majority of chemists and druggists feel that the banquets and excursions are primarily intended for a select few, and they have no wish to be benevolently tolerated. If the committee really prefer to keep up their select little parties we have nothing to say; but if they have hoped to make the conferences anything like national, it is to be hoped that they will recognise the fact that they have not yet fully succeeded.

# CORNER FOR STUDENTS.

CONDUCTED BY RICHARD J. MOSS, F.C.S.

## QUALITATIVE ANALYSIS.

THE subject of the next exercise will be a *metallic alloy*. It is to be submitted to a complete systematic examination, designed to detect all its constituents, and to demonstrate the absence of other substances. A list of the metals detected is to be given, distinguishing those that are present in quantity from minor constituents.

Applications will be received up to September 20, and portions of the alloy will be sent to applicants on the 25th.

Students' reports will be received up to October 15.

## REPORTS.

The alloy which formed the subject of the July exercise was the bronze employed for coinage in France, consisting of—

	Parts
Copper .. .. .	95
Tin .. .. .	4
Zinc .. .. .	1

It contained also, in minute quantities, lead, nickel, and iron. The specimens sent to students were pieces of a thin sheet prepared by rolling out a 10-centime piece. From the colour of the alloy it was evident that copper was one of the chief constituents; in fact, it might almost be mistaken for pure copper; mere external appearance afforded no further clue to the nature of the alloy.

The alloys of copper employed for various useful purposes are very numerous, and from an industrial point of view they are highly important. In the nearly pure state in which it occurs in commerce copper is seldom used for castings; it has a great tendency to expand at a certain stage in cooling, the casting becoming crystalline and honeycombed. Several of its alloys are, however, well suited for castings. The chief alloys are brass, bronze, and German silver. Brass is essentially a copper-zinc alloy, the proportion of zinc varying according to the purpose for which the brass is required, and other metals are added to impart special qualities to the alloy. Ordinary brass (70 copper, 30 zinc) can only be worked cold; Muntz metal (60 copper, 40 zinc) may be wrought, like iron, white-hot. One or two per cent. of lead renders brass more readily filed, and better adapted for working on the lathe. Bronze is essentially a copper-tin alloy; it often contains also a small quantity of zinc, and in statuary and ornamental bronzes lead is an important constituent.

In the analysis of an alloy of this character nitric acid (sp. gr. about 1.2) has special advantages as a solvent. If the alloy contains platinum or gold a metallic residue will remain undissolved; tin and antimony leave a white pulverulent residue, which may also include arsenic if present. The nitric acid solution is suitable also for the detection of the small group of metals which form insoluble chlorides.

In examining the precipitated sulphides of the heavy metals ammonium sulphide should not be used as a solvent if copper is present and mercury absent, as copper sulphide is slightly soluble in it. Yellow sodium sulphide is very easily prepared, and has the advantage of being without action on copper sulphide. If, however, mercury is present, it is better to use ammonium sulphide, as the presence of copper in the solution is less objectionable than the presence of mercury, the sulphide of which is soluble in the sodium compound.

## PRIZES.

The First Prize for the best analysis of the alloy has been awarded to G. WILLIAMS, 386 Bearwood Road, Birmingham. The Second Prize has been awarded to R. A. HOYLE, Ansdell, Preston.

## Marks Awarded for Analyses.

G. Williams (1st prize) .. .. .	95
R. A. Hoyle (2nd prize) .. .. .	92
J. F. Croshaw .. .. .	90
Veritas .. .. .	90
Nemo .. .. .	85
E. Munns .. .. .	83
H. C. .. .. .	70
J. H. W. .. .. .	70
T. Carswell .. .. .	65
T. Murkitt .. .. .	60
Adam .. .. .	50
Pill-box .. .. .	40
Chronos .. .. .	40

## TO CORRESPONDENTS.

*Prizes.*—The students to whom prizes are awarded are requested to write at once to the publisher, naming the book they select, and stating how they wish it forwarded.

Any scientific book that is published at a price not greatly exceeding half-a-guinea may be taken as a first prize.

Any scientific book which is sold for about five shillings may be taken as second prize.

\* \* \* All communications should include the names and addresses of the writers.

*G. Williams.*—Your paper is a very creditable production for a self-taught student.

*J. F. Croshaw.*—There was no difficulty in detecting the trace of nickel present, the brown colour of the ammonium sulphide filtrate from the iron group at once suggested nickel, and on treatment of the precipitate with cold dilute hydrochloric acid the black residue that remained gave an unmistakable nickel reaction in the borax bead.

*Veritas.*—If a large quantity of the bronze were operated upon, no doubt it would be possible to isolate traces of the alkali earth metals, and of several other elements, but in the small quantity that was sent to you there was probably much less calcium and magnesium than would be derived from your filter-papers.

*Nemo.*—You do not support the statement that bismuth was present by any experimental evidence.

*H. C.*—Sulphuric acid will not precipitate a trace of lead from a nitric acid solution except on evaporation, or the addition of alcohol. Alcohol must, however, be cautiously used, as several other sulphates are insoluble in it unless it is dilute.

*J. H. W.*—We cannot explain why you failed to precipitate the zinc, &c., as, under the conditions you describe, it is quite impossible that ammonium sulphide could have failed to produce a precipitate. Possibly your ammonium sulphide has undergone decomposition from exposure to air and light.

*T. Carswell.*—The antimony in the residue insoluble in nitric acid would be in the form of teroxide, which is readily soluble in hydrochloric acid, and from this solution it is precipitated by zinc as a black powder. You certainly succeeded in establishing the presence of copper beyond all doubt, but it was scarcely worth while to devote so much time and trouble to the verification of so obvious a conclusion. The colour of the bronze was in itself almost conclusive proof that copper was the chief constituent.

*T. Murkitt.*—There was little to be inferred from the brittleness of the alloy, unless you knew the treatment to which it had previously been subjected. In this case the brittleness could be removed by annealing. By heating and then cooling suddenly, bronze is made soft and pliable; cooling slowly makes it hard and brittle; the reverse occurs in the case of steel. The apparent change in the colour of the precipitate produced on adding acid to the ammonium sulphide solution was no doubt due to the change in the colour of the liquid. Until an excess of acid is added the precipitated sulphur looks yellow because it is seen through a yellow liquid.

*Adam.*—You did not thoroughly precipitate the copper at first, hence at a subsequent stage of the analysis a precipitate was formed which gave a blue bead with borax.

*Pill-box.*—To apply Reinsch's test for arsenic (deposition on copper) it is essential that the hydrochloric acid solution should be free from oxidising agents, such as nitric acid. This was not the case in the solution you operated upon.

*Chronos.*—The constituents which you overlooked were by no means unimportant; a small quantity of tin or zinc makes a great difference in the physical properties of copper alloys.



## Pharmacalia.

### PROFESSOR ATTFIELD ON PHARMACY.

PROFESSOR ATTFIELD has delivered an admirably arranged and well-worded Presidential Address before the members of the British Pharmaceutical Conference at Southampton.

The Doctor's statements have raised discussion outside the pale of pharmacy, and have evoked an article from the *Times*. It is always flattering to receive public notice, but we have carefully examined this latter document without being able to gain a clear notion as to what precisely its strictures were intended to convey. It seems based upon the principle of blowing hot and cold, and to be an average specimen of the art of stringing sentences together without much meaning. Whether praise or blame of Professor Attfield's reasoning may be designed we leave others more skilful than ourselves in making something out of nothing to decide.

It concerns the collection, preparation, and distribution of drugs, and the question is discussed whether British Pharmacy in relation to the State performs these three duties in the most effective way. One mode of distribution specially claims attention, seeing that it is carried on with marvellous industry and is a source of abundant profit. The sale of patent medicines, which are portable proprietary preparations, has reached huge proportions; and it is suggested that an improvement in this direction might result in our having in the place of secret remedies prescribed by persons at a distance, and who are irresponsible, the open recommendation of simple remedies by pharmacists who have themselves made the components, and who can guarantee their trustworthiness.

Looking at the commercial and not on the ethical bearings of the subject, we do not think that any personal qualifications of the pharmacist, or private interference on his part, will effect the smallest modification of this branch of speculative industry. The secret of the success of the patent medicine trade rests on the overwhelming influence of advertisement. Advertising is a distinct power in literature, and the inventor or proprietor of a supposed remedy has but by its medium to tell the whole world, Here is something which will do you good: something which will relieve pain, or prolong life; and tens of thousands will put faith in the assertion, and buy the nostrum.

Whether the invention be secret or otherwise is not of material consequence; it sells, not on account of the occult mode of its preparation, but because its name and advocated use are brought daily before an immense number of people.

The gain reaped by this system of publicity is enormous; and so long as the sale of such articles is legal, so long will the trade in proprietary medicines flourish and continue.

Here criticism must merge into absolute commendation. The proposal that drug-farms should be more generally established is novel and worthy of consideration on the part of practical men. Many of Professor Attfield's aphorisms are admirably expressed, and carry conviction with them. As, for instance, "All efforts to secure future drug-dealing and drug-working to druggists must be founded on personal professional knowledge possessed by every pharmacist." Again, "The requirements of the public have called him [the pharmacist] into existence; the requirements of the public maintain him in his position; only in proportion as he meets the requirements of the public will he promote his own interests or raise either himself or his calling."

Lastly, we may make one other quotation which seems to be the keynote of the address: "A Pharmacy Act which

provides for the qualification of vendors of drugs, but contains no clause preventing the sale of drugs by unqualified persons, is incomplete. And if our own Pharmacy Acts are thus incomplete, the sooner they are rendered complete by an extended Pharmacy Act, the better for the State, the pharmacist, and the public." We have no wish to further comment on the text to weaken Professor Attfield's words.

\*\*\*

### CHINESE PHARMACY AND MEDICINE.

Chinese pharmacy, if we may judge from certain communications, is in a very low condition. Many of the medical remedies in constant use belong rather to the category of curiosities than of substances the use of which is indicated either by practical experience or by scientific observation.

The pseudo-philosophies of China so largely intermingle with medical research as to hinder materially the progress of the healing art, and allow its actual practice to be disfigured by fantastic theories.

European countries have long ago abandoned the raptures of the alchemist, and the learned ignorance of the mediæval physician.

We are told, however, that no one could form a just estimate of the pharmacy of the Flowery Land who did not recognise the importance assigned to the influence of the strange affinities which are supposed to exist between the five points of the compass, the five colours, the five flavours, the five elements, and other fanciful phenomena.

We may read of such things with some degree of toleration when we reflect that, as late as the seventeenth century, the philosophy of the age had not reached a much higher standard in our own land; and that we had to wait until the nineteenth before empiricism was swept away by the satirist, by common sense, and by better knowledge.

One has only to study the Custom-house returns of the medicaments in daily use in China to see what strange articles are in demand. They rely as much on herbs and simples as a primitive race of people, and their surgical treatment is of an elementary description. Their medical etiquette is probably unique. For a patient to detail his symptoms would be a reflection on the perspicacity of his adviser, who is bound by his superior intelligence to discover the nature of the disease, and by the aid of diagnosis to prescribe a remedy. In most instances, we are informed, the medicine ordered is very cheap, and somewhat nasty; and yet, to make the parallel complete between modern Chinese pharmacy and our own antiquated formulae, there are sundry compounds whose chief, and, perhaps, sole, value depends upon the costliness of the materials.

Many precious stones are reputed to be wonderfully efficacious, the diamond always excepted, which in India and the West is looked upon as a dangerous poison. One of these polypharmic preparations consists of white and red coral, rubies, pearls, emeralds, and musk, with one or two earths in various quantities; the whole crushed into powder and rolled into pills with gum and rose-water. A final covering of gold leaf completes the operation. This enjoys the reputation of being an infallible cure for all diseases which arise from blood-poisoning and break out into cutaneous eruptions. Unscientific as the Chinese panacea may appear, its strengthening qualities are said, even on European testimony, to be remarkable; and the old Jesuits affirm that they have seen men snatched from death by its judicious use. Probably the musk contained acted as an efficient stimulant.

Pharmacy but repeats herself; for the once renowned Kent's Powder was very similarly composed. These imposing globuli contained, like the Chinese bolus, a large quantity of musk, present in sufficient abundance to be overpowering.

Neither coral nor pearls were wanting, though amber took the place of rubies; and, like the Celestial antidote, the balls into which the powder was fashioned were elaborately gilded.

Pharmacists of the present day who exhibit the stereotyped gold balls to an admiring public are reviving in a wooden manner the tradition of Kents' Powder or Globuli, which we have ourselves retailed at 15s. a piece. They were good for hysteria, epilepsy, and fevers, and were equally good—for trade. Another famous remedy is called *ku chin*, or bitter wine, reminding one of the bitter eup which had a brief reign in British pharmacy 20 years ago. It is a strong and invigorating tonic, and is praised as an excellent preservative of health when taken fasting the first thing in the morning. It is composed of aloes, myrrh, frankincense, and saffron dissolved in spirit. The tincture is exposed to the action of the sun for one month, and, when thoroughly digested, is poured off bright, and so exhibited.

The educated Chinese are not insensible to the fact that their mode of therapeutics will not bear comparison with that of Europe; and as in France Molière satirised the pretensions of the physician of his day, so the celebrated novel "Hung Lou Meng" burlesques the prescription of a Buddhist priest, intended for the cure of the ailments of Mademoiselle Pao-chai. It ordered the pistils of a white mountain flower or peony which had bloomed in the spring, of a white lotus that had bloomed in the summer, of a white poppy that had bloomed in the autumn, and of a white plum-blossom that had bloomed in the winter. Of each of these, 12 oz. All were to be preserved till the vernal equinox of the succeeding year, dried in the sun, mixed into powder, and dissolved in 12 mace weight of rain, and the same amount of pure dew, hoar-frost, and snowflakes, all of which must have fallen on that particular day. The ingredients were to be mixed and made into pills, and placed in an old porcelain jar, which must be buried under the root of a flower. When the fair patient was unwell the jar was to be exhumed, and a dose to be taken forthwith. The burlesque came strangely near the reality, if we may judge from no few specimens of Chinese prescriptions, and from the air of mysticism with which their instructions are conveyed.

\* \*

#### SACRIFICIAL MEDICINE.

There is a curious commentary on this subject in the recent work by Frances Power Cobbe, under the heading "Sacrificial Medicine." This admirable writer attempts to theorise upon the matter, and to show that ancient pharmacy could not have been based upon the teachings of observation, but upon the amount of sacrifice to be exacted from the patient, either in the way of outlay of money or by personal suffering. Great curative results were expected when the remedy involved expenditure or feelings of revulsion. She would therefore sum up the medical practice of the past under the two classifications of the costly and the nasty. In other words, doctors and their patients valued remedies in proportion to the price paid for them either in money or in pain. Thus are explained the aurum potabile, the actual cautery, and the loathsome mess, liquid or solid, as the case might be. As illustrations are quoted:—Emeralds in case of dysentery, recommended by Avenzar; the eight grains of that noble lunar medicine, the wine of silver, or the dissolved pearls, either of which, we are assured by Matthioli, to be sovereign against melancholy. Coral, being more within popular reach, was prescribed by Galen, Pliny, and Avicenna. Silk, then a rare substance, was ordered by Dioscorides. The noble solar oyl, mixed

with the lunar oyl, and mercurial oyl, formed, according to Bolnest, a great arcanum, fit to be used in most diseases.

The author asks if, in these modern days, we are altogether free from the vulgar notion of estimating value by the price paid. Do we not often in an illness melt down many sovereigns in its cure? Do we ever take one-third of the expensive medicines which are included in the bill? Do we not hear of heroic fees being offered to the physician of the day to induce him to look a few minutes at a patient to whom he has been summoned 50 or 500 miles?

Far greater was the influence of the thought that by the pain or disgust entailed upon the patient remedial value could be computed. So detestable were some of these compounds that Plato says that the Athenian physicians were wont to engage the rhetorician Gorgias to accompany them and persuade their patients to take their prescriptions. These horrors we shall not recapitulate, as they are familiar to the readers of the *Aurora Chymica*, Matthioli, and the old dispensaries. The spirit of sacrifice was shown in weary pilgrimages to holy wells, the waters of which had no healing efficacy, while the Royal touch for scrofula was made sufficiently sacrificial by the fees exacted for its performance. The learned Dr. Samuel Johnson was thus touched on the head—and possibly a little in it—when he received this favour from His Majesty King George. Royalty being scarce, the gift of touch was extended to those who had been fortunate enough to eat eagle's flesh. In both cases the notion of difficulty of access was concerned. Nature, says Miss Cobbe, asks us invariably to do some simple thing, but we always want to visit some far-off streams, and reject the true prophet who only bids us "wash and be clean."

Not later than the time of Dr. Radcliffe, whose name is imperishably connected with the Oxford Infirmary, scarlet fever was treated with scarlet hangings and tapestry, care being taken to exclude every breath of air, and to keep up the temperature. Bleeding, banished from English practice, survived in Italy, and brought Cavour to an untimely death. Homœopathy itself was but the reaction against costliness and the disgusting; and to the philosophical spirit of deduction and observation we owe the enlightened mode of medical treatment which marks the progress of this century.

\* \*

#### THE UNIVERSITY MIDDLE-CLASS EXAMINATIONS.

The Universities of Oxford and Cambridge are desirous of still further increasing their system of local examinations and to make a scheme arranged by their joint Boards serve as the Preliminary or Entrance examination to the various professions which exact such an introduction. The plan has met with much favour, and as the Pharmaceutical Society demands such a passport to the right of commencing technical study, application has been made to the Council to ascertain how far as regards pharmacy the idea would be entertained.

It is clear that whatever brings English education under one uniform system, and connects hitherto outside interests directly with our Universities will be an indisputable advantage. To us, much more than to public schools, and to the higher branches of professional life, would this new relationship be beneficial. Our Preliminary is not in our case a mere pass, it is a necessity, for by its means only can we insure amongst us the presence of those who have some claim to a liberal education. Nor can the authorities be blamed for having been too stringent in their regulations, or for having exacted too severe a test of previous education from those wishing to join our ranks. Should the scheme assume a more definite shape, and the proposed University examination be not only accepted as a valid certificate in lieu of the existing system, but be adopted altogether, some



changes will take place. A misgiving naturally arises as to whether the College of Preceptors, who, by request, took the helm, will view with equanimity the fact of their being superseded. We are not aware how far this may be in contemplation, but should such an event occur it is possible that some slight vexation may be felt by those who so willingly consented to meet the wishes of the executive. A second and most salutary change must of necessity ensue. Our youth will be compelled to have a broader and better scholastic training than they have now, or they will not satisfy their new examiners. The subjects may remain the same, but they can no longer be arranged to fit the supposed wants of one particular class.

From one penalty the future pharmaceutical student will be exempt: no longer will he have to drudge his weary way through the eternal "Gallic War": for him no longer will Caesar win every battle, and summon defeated chiefs before him, suppliant and weeping. No more will he have to learn how many towns were burnt, and how many thousands slain; and never again will the doubt rise in his mind as to whether the immortal Julius always spoke the truth. All this is to the good, and we hail with satisfaction the advent of that day when a brighter page in prose and verse shall be opened to our Latin students; and when we may hope to hear for positively the last time that "all Gaul was divided into three parts."

## Pharmaceutical Society of Ireland.

THE monthly meeting of the Council of this Society was held on Wednesday, the 6th inst., in the College of Physicians, Kildare Street, Dublin, at three o'clock.

The VICE-PRESIDENT, Dr. AQUILLA SMITH, presided.

The other members of the Council present were Messrs. Allen, Brunker, Dr. Collins, Doran, Grindley, Hodgson, Holmes, Sir George Owens, Simpson, Wells, and Dr. Montgomery.

Mr. HUGH FENNEL, the Registrar, read the minutes of the last meeting, which were confirmed.

The REGISTRAR read a letter from Mr. Jas. Carse, of Belfast, complaining of the decision which the Council had arrived at with respect to his case, and stating that he would take an action against them unless they complied with certain requests which he made in his letter.

CHAIRMAN: His request is limited to a very small thing, namely, allowing him one year.

Mr. HODGSON: I think the simple way would be to refer the letter to the Law Committee, and let them deal with it as they think best.

Mr. HOLMES: Is there not a threat in the letter against a member of the Council?

CHAIRMAN: It does not appear to be a case for the Law Committee. It is a case for the Council to decide on. He says he has taken advice, and will bring an action.

Mr. ALLEN: I think we should take no notice whatever of his threats.

Mr. BRUNKER: I move that the letter be marked "read." The Council have spent two whole meetings on his case, and a majority have declared their opinion, and I do not see any ground for reopening the matter.

Mr. HOLMES seconded the motion of Mr. Brunker, which was put and carried.

The Registrar was directed to inform Mr. Carse of the decision arrived at.

A letter was received from Mr. Thomas R. Lester, of Cork, presenting some prescriptions for the use of the examiner in pharmacy.

On the motion of Dr. COLLINS, seconded by Mr. DORAN, a vote of thanks was passed to Mr. Lester.

The REGISTRAR read a correspondence arising out of a letter written by Mr. Alexander Chapman, L.P.S.I., of Belfast, in reference to the acceptance by the Royal University of Ireland of certificates for compounding. Candidates for the licence in medicine must produce a certificate of having

compounded for three months, signed by a licensed apothecary attached to a recognised hospital.

This was considered a question of interest to licentiares in pharmacy, and Mr. BRUNKER moved—

That the Registrar be directed to address to the Secretaries of the Royal University of Ireland a query relative to the nature of the certificates in Practical Pharmacy required by the Council of that body, and to request that certificates signed by duly-qualified licentiares of the Pharmaceutical Society of Ireland should be accepted by them.

Mr. GRINDLEY seconded the resolution, which was unanimously agreed to.

A letter was received conveying his Excellency the Lord Lieutenant's approval of the election of Mr. Charles Evans as examiner in pharmacy.

The next subject on the paper was the recommendations of the Pharmacy Act Amendment Committee.

In accordance with an understanding that these matters should not be discussed at this meeting, as the Belfast members were unable to attend,

Mr. ALLEN moved that the consideration of the recommendations of the Pharmacy Act Amendment Committee be postponed to the meeting of the Council on October 4 next.

Dr. MONTGOMERY seconded the motion, which was unanimously agreed to.

In the course of the discussion the following conversation took place:—

Mr. MONTGOMERY: Is it essential that the general body should approve of the action of the Council?

The CHAIRMAN: No.

Dr. MONTGOMERY: Or can we make laws without their approval?

Mr. BRUNKER: It is not a proposal to make laws. These are only recommendations for the amendment of the laws. I take it that the Society in general, by voting for the members of the Council, have delegated their authority to the Council, and, except in the way of being consulted on important matters, have no weight at all.

The CHAIRMAN: The Council would have power to make suggestions on the occasion of the introduction of a Bill without going to a general meeting.

After transacting some financial business the Council adjourned.

## The Chemists and Druggists' Trade Association.

THE Executive Committee of this Association met at Birmingham on August 9, Mr. Robert Hampson (President) in the chair. There were also present Mr. John Harrison (Vice-President), and Messrs. Arblaster, Barclay, Bell, Churchill, Cross, Davis, Ellinor, Holdsworth, Jones, Laird, Maltby, Mason, Parker, Paterson, and the Solicitor.

The committees of the Association were first arranged, and the solicitor, secretary, analytical referee, bankers, and auditors were re-appointed.

### SCOTCH AFFAIRS.

Mr. PATERSON advocated proceedings being taken against unregistered traders in Scotland.

The SECRETARY said that in May last he had written to the honorary secretary of the Scottish branch asking to be supplied with the names of a few unregistered traders residing in Scotland who were openly selling arsenical sheep-dip, but he had not yet received such a list.

On the suggestion of Mr. BARCLAY, the Secretary was instructed to again write to the secretary of the Scottish branch respecting his (the Secretary's) former application.

The SECRETARY said that some months since it came to the knowledge of the Committee of the Scottish branch of the Association that an application was about to be made by the Edinburgh University Court to Her Majesty in Council for powers to make attendance in practical classes in physiology, pathology, and materia medica imperative, and that the instruction accepted as equivalent to a course of practical materia medica be apprenticeship for not less than two years in compounding and dispensing drugs under a

registered medical practitioner or a member of the Pharmaceutical Society of Great Britain. A memorial had been transmitted to the secretary of the University Court, and the Faculty of Medicine had replied, consenting to alter their proposal, so that it should include all registered chemists and druggists, and not pharmaceutical chemists only.

#### LIVER MIXTURE.

The Executive resolved to defend a member of the Association against whom an action was threatened for the alleged infringement of a trade-mark for liver mixture, on the grounds that the words "liver mixture" had been for many years of common use in the trade, and that it was not advisable in the interest of the trade that any person or firm should claim a monopoly over such common terms.

#### POISONOUS PATENT MEDICINES.

It was moved by Mr. BARCLAY, seconded by Mr. HOLDSWORTH—

That a deputation be appointed by the Executive to wait upon the Government to ask that the sale of patent medicines containing scheduled poisons may be put under the same regulations as the sale of other scheduled poisons.

To which Mr. PATERSON moved as an amendment, and Mr. BELL seconded, the previous question. On being put to the vote, ten voted for the amendment and four against it. It was consequently carried.

#### LOCAL SECRETARIES.

On the motion of Mr. BARCLAY, seconded by Mr. JONES, it was resolved—

That the Finance Committee be authorised to appoint local secretaries in all towns in England and Wales containing six or more chemists and druggists, and that the same Committee be empowered, in conjunction with the Scotch Committee of the Association, to appoint local secretaries in Scotland.

### Provincial Reports.

#### BOSTON, LINCOLNSHIRE.

**EXPLOSION.**—On August 17, Frank Altoft, assistant to Mr. Wilson, chemist and druggist, West Street, went into the cellar underneath his master's shop with a covered light. Inflammable vapour had collected in the cellar during the night from casks of benzoline and paraffin, and exploded. Part of the shop-front was blown out. Altoft was seriously injured; his head, face, and neck were scorched and burnt, and the fingers of his left hand were burnt almost to cinders. He was taken to the hospital, and his recovery was considered doubtful. The fire was not extinguished until the cellar was nearly filled with water. The damage is covered by insurance.

#### BUXTON.

**NEW ANALYSIS OF THE WATERS.**—The *Buxton Advertiser* of September 6 and later dates contain some papers by Dr. J. C. Thresh, which give a new analysis of the waters, and criticise the results obtained by previous investigators. He has found that the deposit left by the water in the tanks contains barium, strontium, lead, molybdenum, copper, cobalt, and zinc in small quantities, while the bulk consists of the higher oxides of manganese. The chief saline constituents of the water are the bicarbonates of calcium and magnesium, with traces of the alkalies, and of iron, barium, and magnesium.

#### DAWLISH.

**MASTER AND ASSISTANT.**—At the Petty Sessions, on August 17, George John Cutliffe, chemist, of the Strand, was summoned by Arthur Haycock, late in his employ as assistant, for assaulting him on July 26. Complainant called at defendant's shop and asked for some wages due to him. Defendant refused to pay him, upon which complainant threatened county court proceedings. An altercation followed, which ended by defendant taking Haycock by the collar and pushing him out of the shop. Defendant alleged that complainant was the worse for drink when he called, but this was denied. A fine of 6*d.* and 9*s.* costs was imposed.

#### HULL.

**SELLING METHYLATED PAREGORIC.**—A chemist and druggist named Robert Banks, of Porter Street, was summoned at the Hull Police Court on the 12th inst. for illegally selling paregoric in the preparation of which methylated spirits had been used. Mr. Claxton, collector of Inland revenue, stated that the defendant had rendered himself liable to a penalty of 100*l.* The defendant, who admitted the offence, but alleged that it had been committed in error, was fined in the mitigated penalty of 10*l.* and costs.

#### NEWCASTLE-ON-TYNE.

**FIRE.**—A destructive fire happened here on August 22 on the premises of Messrs. Wilkinson & Simpson, wholesale chemists and oil merchants. The large stock of oil caused the fire to spread very rapidly, and, though it was got under in about four hours, property to the estimated value of 12,000*l.* was destroyed. The origin of the fire is supposed to have been through someone smoking in the passage, and throwing a lighted match accidentally on some oil, as the fire was traced to have broken out in that part of the premises, and then rushed up the hoisting-shaft, and so set fire to the chemicals and oils stored above the shop. The property was insured in the North British, and the stock in the London, Liverpool, and Globe Insurance Companies.

#### PLYMOUTH.

**IMPUDENT ROBBERY.**—On August 20, a lad named Clark, serving on board the training-ship *Pilot*, entered the shop of Mr. R. J. Hiley, chemist and druggist, Cobourg Street, and asked the price of a bottle of glycerine. On being told the price by Mr. Hiley, who was at the time outside the counter, Clark with a swift movement caught at Mr. Hiley's gold watch and chain. He succeeded in breaking the bar of the chain, and thus got entire possession of the watch and chain. Mr. Hiley, however, immediately seized him, and Clark thereupon threw the watch on the floor with such violence as to injure its face, and followed this up by a vicious attack on the owner, whom he struck several times in the face. With some assistance the youth was secured and handed over to the police, but not until he swept various articles off a marble table which stood near.

#### ST. ALBANS.

**FIRE.**—On Sunday morning, August 27, a great fire occurred here, totally destroying four shops and houses, among which was the establishment of Mr. A. R. Ekins, pharmaceutical chemist. The fire originated in the store of an ironmonger next door, and became uncontrollable in consequence of the stock including a quantity of petroleum. Mr. Ekins has secured temporary accommodation in the shop of Messrs. Syrett.

**CHARGE AGAINST A DISPENSER.**—Alfred Rivers Wilson was before the magistrates on August 26, charged by the authorities of the dispensary with forging a receipt to a certain bill. The defendant was entrusted with moneys to pay the quarterly accounts. According to the evidence of Mr. Thomas Harper Francis (Burgess, Willows & Francis), he called on the firm in that first week in August, and said he found that part of the money which ought to have been paid to the firm had been used by his wife to pay a domestic account. He asked for time, which was accorded, and the firm were not instituting these proceedings. Still the defendant handed to the treasurer of the dispensary the bill of Messrs. Burgess, Willows & Francis, stamped and receipted, amount 2*l.* 9*s.* 2*d.* He was committed for trial at the next Assizes.

#### FIRE AT MESSRS. MAY & BAKER'S CHEMICAL WORKS.

A serious fire occurred on the premises of Messrs. May & Baker, at Battersea, on August 31. The fire originated in the ether room, which contained chemicals to the value of more than 4,000*l.*, the whole of which, together with a limestone shed, were entirely destroyed. The fire was conquered in less than an hour by the vigorous exertions of Messrs. May & Baker's own brigade and the fire brigade of their neighbours, the Plumbago Crucible Company. Two workmen were seriously injured. The premises and stock were insured. The cause of the fire is unknown. It may be added that the firm issued printed notices the same day informing their customers that business would not be interfered with.



## THE

## British Pharmaceutical Conference.

## NINETEENTH ANNUAL MEETING, SOUTHAMPTON.

THE sessions of the British Pharmaceutical Conference were opened on Tuesday, August 22, in the Watts' Memorial Hall, Southampton, under the presidency of Professor Attfield, F.R.S. The first session commenced soon after 10.30 A.M., when some 75 members were present. The number reached about 100 while the President delivered his address.

After Professor Attfield had taken the chair,

Mr. W. B. RANDALL in a short speech welcomed the Conference to Southampton. He reminded the Conference that the gentleman who had represented the town at York had kindly told them something of the disabilities of the pharmacists of Southampton in regard to their reception of the Conference. He trusted, however, the arrangements they had made would secure the comfort of their meetings and minister to the enjoyment of the members. He could not say that they were favoured with wealth dug from the earth, but they had perhaps other attractions which made Southampton a good place to work in and enjoy life in. The monks of old had evidently thought so when they built Netley Abbey in the neighbourhood. The Government, too, had thought so when they established Netley Hospital. The Norman kings, too, in selecting the New Forest as a hunting-ground, and the Queen in choosing Osborne as a residence had shown their appreciation of the locality. Therefore they had no reason to be ashamed of their surroundings. Southampton had interesting historic associations, too, and though he was not going to detain them by narrating these, they would remember that here Canute rebuked the sycophancy of his followers, and he might add that on the very spot where they were met another man, less known, perhaps, to some, had run about when a child. The hall where they were was built where had been the garden of the father of Dr. Watts, who, himself an observer of nature, had taught them all the lesson of the busy bee. He had much pleasure in the name of the local committee in welcoming the British Pharmaceutical Conference to Southampton.

The PRESIDENT expressed the thanks of the Conference for this welcome.

After the delegates had been named Mr. F. BADEN BENDER read the

## REPORT OF THE EXECUTIVE COMMITTEE.

The report stated that the Committee had met several times, and had transacted the general business of the Conference. Some improvements had been made in the Year-book, a new section, entitled "Bibliography," being especially alluded to. The issue of a general index to the Year-books had been postponed for financial reasons. The blue list of subjects suggested for investigation had been considerably circulated among Colonial pharmacists, and some of the latter had consequently sent subscriptions. Especial mention was made of the assistance afforded by Mr. Bosisto, the President, and Mr. Shillinglaw, the Secretary, of the Victoria Pharmacy Board. Only one grant in aid of research had been applied for. This was to Mr. Alfred H. Jackson, B.Sc., of Manchester, who would present a first report on essential oils of cinnamon and cassia to the present meeting. Mr. Gerrard, to whom a grant was voted last year, had continued his investigations on the relative values of wild and cultivated belladonna, and would present a further report; but Mr. H. G. Greenish, who had also received a grant last year to investigate the principles of *Nerium oleander*, had written to say that his results were

not yet sufficiently complete to justify publication. Mr. Carteighe having been elected President of the Pharmaceutical Society, had felt it to be his duty to resign his position as Secretary of the Conference, and Mr. Sidney Plowman had consented to act in his stead provisionally. Fifty-seven new members had been elected since last meeting.

Mr. C. EKIN (treasurer) read the

## FINANCIAL STATEMENT.

Dr.		£	s.	d.
To Balance in hand .. .. .	.. .. .	282	9	10
„ Sale of Year-book by Publishers .. .. .	.. .. .	25	6	8
„ Sale of Year-book by Secretary .. .. .	.. .. .	5	12	6
„ Advertisements, 1879 vol. .. .. .	.. .. .	0	12	0
„ „ 1880 vol. .. .. .	.. .. .	8	19	0
„ „ 1881 vol. .. .. .	.. .. .	103	6	6
„ Subscriptions from Members .. .. .	.. .. .	661	7	3
July, 1881. To Dividend on £250 Consols .. .. .	.. .. .	3	13	5
18-2.				
Jan. „ .. .. .	.. .. .	3	13	5
Feb. 15. To Interest on Deposit .. .. .	.. .. .	3	5	4
		1,998	16	11
Cr.		£	s.	d.
By Expenses connected with Year-book:—				
Printing, binding, and distributing .. .. .	.. .. .	467	0	0
Editor's Salary .. .. .	.. .. .	150	0	0
Advertising and Publishers' Charges .. .. .	.. .. .	30	7	8
Foreign Journals .. .. .	.. .. .	3	19	0
		651	6	8
„ Grants in aid of Research .. .. .	.. .. .	20	1	11
„ Secretary's Salary .. .. .	.. .. .	100	0	0
„ Printing and Stationery .. .. .	.. .. .	37	12	2
„ Sundry Expenses .. .. .	.. .. .	3	13	3
„ Postage .. .. .	.. .. .	44	7	3
„ Expenses of York Meeting .. .. .	.. .. .	18	7	4
„ Secretary's Expenses, York Meeting .. .. .	.. .. .	6	0	
„ Balance at Bank .. .. .	.. .. .	212	9	9
„ Cash in Secretary's hands .. .. .	.. .. .	4	18	7
		217	8	4
		1,998	16	11
Assets, July 1st, 1882 { Cash in hand .. .. .	.. .. .	217	8	4
{ Consols (stock) .. .. .	.. .. .	250	0	0

The Bell and Hills Fund showed 350% invested in Consols and 25% 5s. in hand. The books presented to the York chemists cost 10% 10s. 6d.

Mr. EKIN pointed out that the expenditure of the Conference was somewhat over the income, but he believed that the Year-book on which the money had been spent would bring in subscribers enough to pay all expenses.

The PRESIDENT moved the adoption of the report. He remarked that they did not desire to save money. They had 400% or 500% in hand, which was quite enough to keep them from bankruptcy. They were desirous of publishing a general index to the "Year-books of Pharmacy," which would be of great use to workers in pharmacy. They had found that it would cost a considerable sum, but they hoped soon to undertake it.

Mr. SAVAGE seconded the motion, which was carried unanimously.

## THE GIFT OF BOOKS.

Mr. EKIN announced that the books provided from the Bell & Hills Fund would be purchased and sent to Southampton.

## CORRESPONDENCE.

Mr. PLOWMAN read several letters which had been sent to the President. One was from Professor Bedford, President of the American Pharmaceutical Association, who expressed good wishes to the Conference, and forwarded some advance

sheets of the new United States Pharmacopœia. Professor Bentley, Messrs. Reynolds, Stebbins, Umney, Thresh, Young, Stanford, Proctor, Kinninmont, Taylor, and Postans also sent letters regretting their inability to attend this meeting.

The PRESIDENT then delivered his inaugural address, which was entitled

## THE RELATION OF PHARMACY TO THE STATE.

### THE RANGE OF PHARMACY.\*

PHARMACY, in every country, has high duties to perform towards the State. The humble handmaid of medicine, she has to aid in maintaining that greatest of physical blessings, health; to aid in restoring those from whom that blessing is temporarily withdrawn; and to aid in soothing the life of those to whom that blessing will never come again. From earth and sea, and the living things they foster, pharmacy draws forth drugs new and old, gives them convenient shape, and distributes them to the community. Ever conservative, she searches the whole globe for supplies of medicaments, well known, well tried, and reliable; ever progressive, she searches the realms of nature and the regions of art for new materials wherewith to aid in combating disease and death. And when she has found her *materia medica*, she is unwearied in elaborating them, and unremitting in her endeavours to place them—by her possibly too competitive and too varied agencies—at the door of every dwelling in the land. Exhaustive research, careful manufacture, thorough distribution: these are the means by which her duties are fulfilled.

Is pharmacy performing those duties with the maximum of efficiency, either in the world generally or in any country particularly? Can she better search, better elaborate, better distribute? Can she in any way better meet the public demands made upon her? Can she better serve mankind, either herself directly, or through the profession of medicine? Is she performing any one of her duties better in some countries than in certain others; and, if so, can the international agencies for the exchange of pharmaceutical information be improved in character or wisely increased in number? Is a community best served, in the matter of pharmacy, by a large number of distributors of elaborated drugs, only a few persons being manufacturers of the preparations; or by a smaller number of distributors, each of whom makes his own preparations? Can the followers of pharmacy show the civilised States of the world, or show the governing body of any one State, how legislative enactments, new or extended, will better enable her to perform her high duties?

These are vital questions—vital to the health and therefore to the happiness of society, vital to pharmacy.

They are questions which may well form the subject of an address on the present occasion to a non-political society of pharmacists—the British Pharmaceutical Conference. For with one exception, the last, which will only receive such a passing notice as previous presidents have given to politics, the questions lie outside the area of that original pharmaceutical research, the promotion of which is the chief object of the Conference, their consideration will form an agreeable relief to our deliberations on more technical matters.

They are questions which should strike home to pharmacists as individuals. For does any follower of pharmacy desire to promote even his own sole interest? Let him remember that the better he performs the duties the public require him to do, and have put him amongst his drugs to do, the greater will be his personal success. Let him reflect that he is only one member of the pharmaceutical body, and that in the degree in which he contributes to the welfare of the whole body does he promote his own welfare. Let him never forget, in short, that in pharmacy, as in every other walk of life, the highest self-interest is to be found in the forgetting of self. The requirements of the public have called him into existence, the requirements of the public maintain him in his position, only in proportion as he meets the requirements of the public will he promote his own interests or raise either himself or his calling.

### THE PRESENT CONDITION OF PHARMACY.

*Collection; Preparation; Distribution.*—We must glance at the present condition of the machinery with which we

perform our pharmaceutical duties before we can usefully consider possible improvement.

*Collection:* In searching for supplies of the old and well-tried natural drugs, pharmacy presses into her service natives of many climes and traders of many nationalities. In growing those drugs more or less artificially, she employs thousands of workers in all countries. In making her more strictly artificial saline remedies, she contributes to the support, is often the chief and sometimes the only support, of the chemical industries of Europe and America. And in the exercise of her demands for the new remedial agents she looks to the original researches and discoveries of the traveller, the botanist, the zoologist, the mineralogist, the scientific chemist. Her followers themselves largely conduct original research and discovery; they also largely foster research and discovery by banding themselves into Societies, Associations, and Conferences, for the initiation of original pharmaceutical research, for the payment of expenses incurred in research, and for the free publication of the results of research.

*Preparation:* To manipulate raw drugs and to manufacture compounded drugs is perhaps pharmacy's most special duty, the work which gives to pharmacy a distinctive stamp amongst man's many vocations. Far it is her peculiar art to find the fittest form in which the animal product, the medicinal plant, or the crude mineral shall most directly, easily, and even pleasantly it may be, do the work it is designed to do. From the plant, animal, or mineral which observation or more minute research has shown to have medicinal value, pharmacy must carefully, step by step, and constantly testing progress, eliminate what is valueless, until she is able to say that a simple aqueous infusion or decoction contains all the activity of the raw material. Perhaps she finds that the active matter is only removable by more spirituous fluids, and hence produces a "tincture." Maybe she proves that the aqueous or spirituous fluid, without harm and with some advantage, may, by the boiling away of the solvent, be concentrated to a soft solid or "extract." Possibly, after much labour, she obtains from the crude drug one or more of the actual principles in which reside its activity; extracting such an alkaloid as quinine, such a substance as salicin, such a body as citric acid, such a salt as cream of tartar. Whether she always extracts the active principle or not, she must ascertain its properties in order that its presence may at any time be verified, or perhaps its purity be demonstrated, and in order that she may avoid mixing antagonistic or incompatible drugs when she distributes compound drugs to the public.

To accomplish this manufacturing or manipulative work, either all or some of the followers of pharmacy must possess extensive knowledge. They must have sufficient preliminary education and mental training to enable them intelligently to study the scientific books they will have to master, and to comprehend the principles on which their work is based. They must as pupils give a few years to the acquirement of *materia pharmaceutica*, in order that they may be familiar with the standard physical characters, the general medical qualities, and the commercial importance of the many hundreds, if not thousands, of elaborated materials or mixtures of materials which they desire, sooner or later, to prepare for themselves. They must have some knowledge of botany, as well as of animal and mineral products, or they will not be able to judge of the raw materials with which they will have to deal. They must have a fair knowledge of the natural forces and of mechanics, or they will not be able to convert the raw drugs into preparations having the maximum of medicinal activity and convenience of form or shape, with the minimum of unpleasant flavour, odour, and appearance. They must have a considerable knowledge of chemistry to enable them to judge of the qualitative character of many drugs, and the quantitative character of most, the purity of the chemical substances which they purchase, the state of activity of preparations that have been long in stock, the compatibility or incompatibility of the components of mixtures they are called upon to prepare. A very large amount of such professional and commercial knowledge must be forthcoming somehow and somewhere from the pharmaceutical body for pharmacists rightly to do their duty to the State, as elaborators, or manufacturers, or compounders of drugs. Whether all pharmacists or only some should possess this knowledge, is a

\* For the sub-titles inserted in this address the author is not responsible.



question yet to be discussed. The point up to which division of labour is desirable and beyond which it is undesirable, will be considered subsequently.

*Distribution*: In every civilised state somebody must bring drugs with reasonable reach of every household. Very different agents perform this duty. There is, first, the pharmacist proper, who is not only a distributor but a manufacturer or compounder of the pharmaceutical preparations he distributes; the man who can warrant the purity and efficiency of every drug he distributes, either because he has tested it, or because he has made it himself from materials which his professional knowledge tells him to be trustworthy; the only pharmacist, therefore, who can offer a personal guarantee that the medicine prescribed by a physician will, as medicine, have the effect intended. There is next the druggist, who makes few, if any, compounds, trusting for their purity and efficiency to wholesale manufacturers, and who is able to test few, if any, of the articles supplied to him; but who has such experience of pharmacy as well fits him to supply a widespread demand for drugs—especially in suburbs of cities, and in the small towns and the villages of a country. Third in importance as a distributor of drugs is the general practitioner of medicine, who, if he even has less knowledge of drugs than the druggist, just alluded to, supplies an important demand, not only where pharmacists could do the work, but in outlying country districts remote from a druggist's shop of any kind. Fourthly, the distribution of drugs is effected, to some extent in the aggregate, in certain countries, by shopkeepers other than druggists; that is to say, by grocers, drapers, and such vendors, who admittedly know nothing about drugs, and who, except that they buy in bulk from the wholesale dealer or manufacturer, and retail in small quantity, sell the drugs in the state in which they are received. Lastly, drug distribution is, in certain countries, extensively accomplished by the agency of portable proprietary preparations termed "patent," though only so-called nowadays, in a *lucus a non lucendo* sense, the composition of most of them being a secret. These compounds pass from the producer to the consumer, either by the agency of the retail dealer, often but not always a pharmacist, or through the post-office. The maker of the patent medicines may or may not be a person having knowledge of drugs, and may not even reside in the country in which his articles are sold, therefore may not be legally responsible for any harm caused by their use or misuse.

The relative numbers of these five classes of drug distributors doubtless vary considerably in different countries, and probably cannot be ascertained for any one country. In Great Britain, for instance, there are some 13 000 registered "Chemists and Druggists," but how many of these are in business on their own account, and how many are assistants who have passed the qualifying examination, we do not know; nor do we know how many of those in business on their own account are mere vendors of drugs, and how many can give, respecting all their drugs, the personal guarantee of purity and efficiency already alluded to. There are 23,000 registered practitioners of medicine in Great Britain and Ireland, but how many of these are direct distributors of medicines we do not know. What amounts of drugs are annually sold by grocers, drapers, and other non-pharmaceutical vendors we do not know. Patent medicine stamp duty to the amount of nearly 140,000*l.* was paid into our Inland Revenue in the year ending March 31, 1881, which is equivalent to at least 1,000,000*l.* as the present annual payment by the public for secret remedies. But many proprietary medicines are not liable to stamp duty; so that the extent to which drugs are distributed in this way we do not quite know, though it is obviously very considerable.

#### ITS POSSIBLE IMPROVEMENT.

Thus far the position of pharmacy in relation to the State has been defined, and an outline given of the means or method or machinery—partly haphazard, partly almost naturally evolved—by which pharmacy performs her State functions of collecting, elaborating, and distributing drugs.

Does this existing condition of pharmacy admit of improvement? If so, in what directions?

These are questions of great importance to the community. They also are of the highest importance for the pharmacist, both from the point of view of bounden duty to the State, and from that of obvious self-interest.

That the pharmacy of the present day admits of improvement will probably be admitted by the pharmacists of every State. What human institution does not? But respecting the directions in which improvements may be effected, the period at which they may be introduced, and the rate at which they may be carried out, there will be differences of opinion, especially as regards different States. The pharmacists of each separate nation must therefore separately discuss this question, at all events, as a preliminary step to international discussion at any future time. Our own discussion of the relation of pharmacy to the State will at present be carried on solely from the British standpoint.

*Collection, Elaboration, Distribution*.—Let us again in this order consider the general direction of possible improvements in our important and honourable State relations: our relations on the one hand to remedial agents, and on the other to our fellow-countrymen, who all, at one time or other, need remedial agents.

*Collection*, including, as already indicated, commercial investigations and original research. The therapeutical importance of quinine and morphia have secured attention to the cultivation of the cinchona tree and the opium poppy; but for the vast majority of vegetable drugs, we still have to rely, as regards quality, on the somewhat capricious kindness of unaided nature, and as regards quantity and quality, too often on the good and bad consciences, and perhaps commercial cupidities, of more or less ignorant and irresponsible collectors. Why should not

#### DRUG FARMS

Be more generally established, even in Great Britain? Is land required? Many food farms are being thrown out of cultivation in this country. Would farming other than food farming be likely to be remunerative? Flower-farming and fruit-farming are among the most lucrative callings in these islands. Could not some pharmaceutical body emulate the Royal Agricultural Society with its Woburn experimental farm? May we not hope that a Lawes will arise in pharmacy, who, founding a Rothamstead, will pioneer us towards the successful scientific cultivation of most of the medicinal plants. The area of

#### PHARMACEUTICAL RESEARCH,

In the largest sense of that term, including improved modes of collecting as well as of investigating drugs, could be extended by the State, by societies, and by individuals. But State aid to research of any kind is almost necessarily accompanied by State control, and some peoples are impatient of control, and do their duties to their calling and to the public with the maximum of efficiency in an atmosphere of freedom. State aid in carrying on research in pharmacy would probably be less effective than internal effort, hence improvement in pharmaceutical research by such aid is scarcely to be expected. Internal effort to improve and extend pharmaceutical research may come from societies and from individuals. And already in Great Britain the Pharmaceutical Society and the Pharmaceutical Conference have given good aid to research, especially in affording opportunities for individuals in pharmacy to bring their researches before their fellow-pharmacists, to publish researches without expense, and in the case of the Conference to carry on researches at diminished expense. But any really comprehensive scheme of aid to research by societies, as societies, needs far more ample funds than those at the disposal of the bodies just named; and the source of such funds is not obvious so long as two-thirds of the pharmacists of the country stand aloof from the other third in all matters pertaining to the general pharmaceutical welfare, withholding even that small annual subscription which, contributed by the many, would allow of so much good in many directions being accomplished. In the matter of pharmaceutical research by individuals, English pharmacists, even with the limited aid of the Pharmaceutical Society or the Pharmaceutical Conference, are holding their own, let us hope, but not much more. Such men as Deane, a Morson, or a Squire need no incentive. Force of character and love of truth for its own sake have always and will always bring a few such men to the front, but we can never hope to see many there. The educational endeavours at the headquarters of the Pharmaceutical Society during the past 40 years have



always included efforts in the direction of the encouragement of research, and associations of students and assistants for the prosecution of investigations, more or less original, have been the immediate outcome, a subsequent result being the enlivening spread of active workers at original research, and men have sympathy with original research, throughout the whole country. The introduction of compulsory examination into British pharmacy in 1868 was expected to result, *inter alia*, in such an impetus to education as would carry large numbers of young pharmacists into the region of original investigation. That such an impulse has not resulted, that the cause of the failure has been detected, and that a remedy has been found and is to be applied forthwith, are now matters of history. Soon again will every young pharmacist in this country have such opportunities for acquiring sound pharmaceutical education as will start him fairly on the road to research; and we may reasonably expect that a certain proportion will continue to travel along that grand highway. Sooner or later, therefore, Great Britain, let us hope, will be not only abreast, but ahead, of other countries in the matter of pharmaceutical discovery; that is to say, in the matter of a more extended and trustworthy *materia medica*.

In the matter of the improved collection of drugs, therefore, including the development of the maximum activity of medicinal plants and general control over their growth, and including the prosecution of those branches of original research which shall extend the number and the definiteness of drugs, there is room for great improvement in English pharmacy.

#### WHOLESALE MANUFACTURERS.

*Elaboration*: Is a State best served, as regards pharmacy, by a large number of distributors of elaborated drugs, only a few persons being manufacturers of the preparations, or by, probably, a smaller number of distributors, each, however, making his own preparations? "A smaller number," because, in any calling, the greater the skill, knowledge, and intelligence of its followers, the greater their reasonable expectations of remuneration, and therefore the fewer that can be supported by the community. Now, in Great Britain, unquestionably, the tendency—at all events during the past 50 years—has been for fewer and fewer of the distributors of drugs to manufacture their own medicinal preparations, the retailer relying for these more and more on wholesale manufacturers. Is this practice likely to promote the interests either of the public or of the pharmacist himself? In dealing with a druggist for drugs, simple or compound, the public expect to be served with what is trustworthy. The vendor is a "chemist" as well as a druggist; therefore, presumably, he can chemically verify the trustworthiness of those of his drugs which have chemically definite characters. But he is a "druggist" as well as a chemist; therefore, presumably, he can guarantee the trustworthiness of his non-chemical drugs and drug-compounds. How can he do this if he has not himself prepared those compounds? For they cannot be assayed chemically. Nay, if he has not himself made them from the raw drugs, and thus by long acquaintance with the latter become thoroughly familiar with them and a thorough judge of their character, how can he guarantee the quality even of what few drugs he may sell in the raw state? Further, if a druggist has not made his own preparations, and has not tested those he purchases—either because he himself cannot test them, or because they are beyond the grasp of chemical analysis—is he one whit the superior in pharmacy to his neighbour, the medical practitioner? Possibly both purchase their compounds of the same wholesale dealer. And if such a *soi-disant* druggist is not more of a druggist than the medical practitioner, where is the foundation for the hope that the medical practitioner will some day turn over all his medicine-making to the pharmacist?

Again, if the druggist is only a distributor, and not a compounder or elaborator or manufacturer, of drugs, has he much more claim to be even a distributor than a grocer or any other trader who buys or distributes drugs? Is the State much better served by one of these distributors than by the other? Let there be no misunderstanding here. The cry of "drugs for the druggist" is a good and wise cry, but only when founded on the druggist's knowledge of drugs, and on his personal guarantee of their efficiency—a

guarantee founded, as before stated, on his having either made or tested all, or practically all, of his preparations. If he merely buys and sells his preparations without such personal knowledge, he cuts his own professional platform from beneath his feet. Having taken up the ground of a mere trader, can he wonder if other more astute traders beat him on that ground? Neglecting what ought to be his own cherished art of elaborating or compounding his preparations, can he wonder if he has to relinquish that remuneration, those profits, which were born of the times when the druggist was such a manufacturer, and which profits are still enjoyed by those who do so manufacture? Relinquish them he must if he deliberately labours on the lines of mere trade. In these days of over population and, consequently, keen competition no other result can ensue. It is a case of reaping what is sown. And the sooner such a man realises his position and adds to his trade the trades of those who otherwise will supplant him, the sooner will he be saved from ruin. This differentiation between trading retail druggists and manufacturing retail druggists is already going on. Afterwards there will be another. Some day what remains of the trading retail druggist's trade in drugs will flow away from him to the counter of the manufacturing retail druggist, even though the latter be charging higher prices; for in proportion as purchasers find they cannot judge for themselves they will go to those who can judge for them. Then if the trader has cultivated other trades, he will have them to fall back upon. Fortunately, in the long run the fittest must survive: the fittest tradesman who is only a tradesman, and the fittest pharmacist who is a tradesman and a professional man too. Does the pharmaceutical apprentice of to-day desire future pharmaceutical success? Let him master the principles of his art. Let him practically learn how, by the aid of chemistry and botany, to test the quality of most of the articles he works with, and how to manufacture what cannot be tested.

Broadly, as a matter of self-interest and sound policy, the preparation of medicinal compounds by a few druggists only, and their mere distribution by the many, is a practice to be deprecated. Clearly, too, it is to the interest of the public that every druggist should be really, as well as nominally, a druggist—a man who either tests or manufactures every one of his own preparations. All efforts to secure future drug-dealing and drug-working to druggists must be founded on personal professional knowledge possessed by every pharmacist. A medical practitioner purchasing drugs at all will surely prefer to obtain them from the neighbouring druggist rather than from a distant source, if he knows that the druggist can give the guarantee of genuineness that he himself cannot provide, and if they can be obtained at a reasonable price. May he not in many cases go further, and give up dispensing bodily, if in the matter of trustworthiness of materials the druggist can beat him, and if, of course, neither he nor his patient suffer too severely in pocket? For the practitioner will thus get that personal guarantee which should be the druggist's most treasured possession—a guarantee which must, in the nature of things, be stronger when afforded by a neighbour than when offered by the distant dealer, especially when in the latter case it is only afforded at second hand by a price-list or a traveller. Contrast the value of the guarantee of a retailer who is also a maker with that of a druggist who can only trust to the respectability of a maker separated from him by two or three different agents and by scores or hundreds, if not thousands, of miles. Some preparations will doubtless always be better made by one man than by another, or by few persons rather than by many. Let us do nothing to damp the ardour of discoverers, inventors, or originators, in great things or in small. And let us always welcome to our shores anything of excellence that may be offered to us by other countries. But if pharmacy has anything to do with the health and welfare of a State, and if that health and welfare are affected by the personal skill, knowledge, and ability of the pharmacist, let us avoid those false but specious principles, and those false and more specious practices, which would sink pharmacists to the level of mere traders, mere dealers, mere agents, worthy and honourable enough in their sphere though such men might be.

In the matter, then, of the elaboration of drugs by all druggists, as against elaboration by a few druggists and



distribution by the many, there is room for great improvement in English pharmacy; for it would be idle to deny that the preparation of his own compounds is the exception rather than the rule with the British pharmacist. No doubt druggists who are manufacturers as well as retailers of the preparations on their shelves may readily enough be found, but it is a fact that many druggists scarcely make even their own pills, but purchase them of wholesale makers (or even only of dealers) who reside, it may be, in quite another county, possibly in another country or in another continent altogether. What can such a druggist know of the quality of such articles? He urges the respectability of their maker. But how much can he know of the characters of makers separated from him by an ocean? After a time prominent makers may be severely pressed by more obscure manufacturers, and he may be dealing with some of the latter, whose probity, with a sense of responsibility naturally diminished by distance, may have given way. In purchasing preparations cheaper, as such a druggist thinks, than he can make them himself, and, still sadder to say, perhaps better looking, is he not buying potage with the coinage of birth-rights? Is he not dealing disastrously with his own interests, and with those of the State, in which he is, after all, but a steward?

Into the question of improvements in the elaboration of particular drugs it is not desirable now to enter; first, because it is dealt with in the list of subjects for research annually issued by the British Pharmaceutical Conference; secondly, because the spirit of emulation will not permit it to pass out of sight; and thirdly, because it would be unwise to dwarf the importance of the main question just considered.

#### DRUG DISTRIBUTORS.

*Distribution:* Given a body of pharmacists, each member of which can, respecting his drugs and drug compounds, supply either the analytical or the synthetical guarantee of efficiency and trustworthiness, then a State is best served by drug distribution being limited, on the whole, to such a body. Limited as a rule. For just as some drug compounds will probably always best be prepared by the few and distributed by the many, so the distribution of drugs to dwellings remote from towns will probably always have to be accomplished by mere distributors. The main limitation of drug supply to the public should, however, be to qualified druggists—men who prepare as well as distribute. The public in a sparsely-populated district might purchase drugs of a mere distributor rather than do without them, especially if the real manufacturer were not far off, and whose personal guarantee were available at the cost of a long walk or a drive, or a short railway journey—just as the services of a solicitor's confidential clerk, or of a medical practitioner's assistant, will be accepted in the absence of those of the principal. Bearing in mind, however, the importance in pharmacy of the influence of the personal guarantee, and that this influence becomes weaker and weaker the more it is stretched, the distribution of drugs should, obviously, in the interests of the public and of pharmacy itself be confined, as a rule, to those who can afford such a personal guarantee—to those who, let me reiterate, either compound or test every drug they distribute. In the matter of pharmacy a State will, year by year, be better and better served to the extent to which there obtains a pharmaceutical policy that provides for the growth, not of those already named as mere distributors of drugs, but of druggists who are manufacturers and distributors too.

#### MEDICAL PRACTITIONERS.

The third-named agent of drug distribution, the medical practitioner, cannot be, and probably never desires to be, a competent pharmacist. He has never professed to be anything more than a distributor of drugs, and as year by year the demands upon his medical, surgical, and sanitary skill become, as they do, great and greater, he will probably find his pecuniary interests, his tastes, and his aspirations for social position prompting him to relinquish drug distribution altogether. Let pharmacists take care previously to prepare themselves for the work that will then fall into their hands; for, whatever be the period when such a state of things comes to pass, it will be the outcome of a public demand for more and better work all round, from the phar-

maceutical as well as from the medical practitioner; nay, the period of the demand will be greatly accelerated by the promise and power of the potential supply. Doubtless the country doctor will always carry, or hold himself ready to carry, in his pocket, his saddle-bag, or his carriage, agents which heal as well as agents which hurt, agents to inject into the flesh as well those with which it may be incised, agents in the form of the soothing pill or the stimulating spirit. But for the compounding of even these he will look to the pharmacist proper, who with due and dignified responsibility will be near at hand to supply fresh and trustworthy fluids, convenient combinations, and palatable preparations, and who will receive adequate but not extravagant remuneration.

#### RETAIL VENDORS.

Respecting the distribution of drugs by retail vendors other than competent and trustworthy druggists, it is open to very serious question whether a State does not get more harm than good by such a practice. Such vendors can offer no personal guarantee either of the purity or the efficiency of their drugs. The practice may, perhaps, be tolerated for a time in a country where the machinery for the supply of druggists who are compounders as well as distributors is incomplete. But in a State in which all the druggists are competent for their work, the supply of medicinal agents by vendors other than druggists should only be permitted in districts where population is below a given number per square mile, and then only in unbroken packets supplied by a not far-distant registered and responsible pharmacist. With non-pharmaceutical vendors of drugs must be classed co-operative stores. For personal responsibility respecting either raw or compounded drugs is scarcely compatible with the co-operative system. The companies who own co-operative stores do not make their own drug compounds. They are mere distributors. They could not well do or be anything else. At first sight it would appear that such an undesirable condition of things for the welfare of the public might be remedied by the employment at such stores of a staff of properly qualified pharmacists; men who could not only discriminate between good and bad raw drugs, but who could and would test all supplied drugs admitting of assay, and who could guarantee the quality of all other preparations because they had made them. There is, however, a good reason why such a remedy could not work, for then the cost of, and hence the prices charged for, dispensing prescriptions would necessarily be pretty much those of ordinary retail shops, and the inducement for the public to deal at stores rather than at shops would cease. Besides, long before such a remedy can be applied, society will probably find that money saved at co-operative stores, having to be expended in those rates and taxes, and in those many services now paid for by shopkeepers, there will be a balance of State advantages in leaving trade to the trader, and certainly in leaving the half-trade, half-profession of pharmacy to the pharmacist.

#### PATENT MEDICINES.

Respecting the distribution of drugs in the form of proprietary preparations, especially those called patent medicines. The question here must be not so much what improvements can be effected in this mode of distributing drugs to the inhabitants of a country, as, can the inexorable demand for simple medicinal remedies by the public be supplied in any better form than that of patent medicines. For the demand for simple remedies by all persons, and the habit of prescribing simple remedies by all persons for themselves, or, for one another, are matters which always have laid outside, and always will lie outside, medical practice by professional men, a demand and a habit, the source of which lies deep down among the springs of human nature, and of the common sense of free people. They therefore scarcely admit of criticism, and do not admit of carping, cavilling objection. The demand and the habit exist naturally in this country, and must be dealt with wisely. They scarcely admit even of definition, or of the drawing of any line up to which they may go, and beyond which they may not go. This much would seem certain, however, that if a mother for a child or a friend for a friend may prescribe a remedy which has proved serviceable under similar circumstances, surely a druggist, who is daily dealing with



remedies from year's end to year's end, may prescribe simple remedies too. If one druggist will not do so, we may be quite sure another will; and that to the extent to which druggists generally do not or cannot prescribe simple remedies, to that extent patent-medicine owners will step in and supply the irrepressible demand. Some medical men decry the habit of prescribing by druggists; but is the demand for simple remedies by channels other than the medical man's prescription thereby curtailed? Probably not. On the other hand, do not such medical men, and those druggists who from various motives follow the medical lead, thereby play directly into the hands of the proprietors of patent medicines? In the United States the practice of medicine is largely separated, and most wisely separated, from the practice of pharmacy. But besides this, the open recommendation of simple remedies by druggists is discouraged. With what result? In no country is traffic in secret remedies more rife. It is, of course, wrong for the pharmacist to meddle with pathology, attempting to diagnose while knowing nothing about the human frame. I trust no one will construe what I have said into support of quackery. But whenever and wherever a druggist is free to sell a patent medicine, he surely should be free to sell and be able to sell a simple remedy prepared by himself, by the aid of that special pharmaceutical knowledge and skill which are the guarantee that he is something more than a mere drug distributor. The inability to recommend remedies characteristic of the mere seller of drugs, and the professional jealousy which would stop a qualified pharmacist from recommending them, have probably done more to foster the present enormous demand for secret remedies than all other causes put together. The reduction of what is sometimes termed the patent-medicine evil will probably be effected, chiefly, by that gradual extension of pharmaceutical knowledge amongst our future pharmacists, which will enable them to supply from our own shelves simple remedies for those tiresome minor maladies for which the public are now driven to patent medicines. The druggist who in this country prescribes simple remedies is a man who has been called into existence by the wants of the community; a useful servant, whom the public are too mindful of their interests even to discharge. Society distinguishes clearly enough for all practical purposes between this man and the medical practitioner, and well may be left to seek the aid of one or other as required.

For improvement in drug distribution, therefore, we may reasonably look in two directions. First, in the distribution of drugs being limited, in the main, sooner or later, and of course without injuring any one, to druggists, such druggists being compounders as well as distributors of the drugs with which they deal. This will be brought about internally by education, externally by legislation. Internally by the carrying out of that policy to which pharmacists may now be said to be committed, and which may be summed up in the words sound and thorough compulsory pharmaceutical education; externally by appropriate legislative enactments. Improvement will result, secondly, in our having in the place of secret remedies, which are prescribed by persons at a distance, who are irresponsible, the open recommendation of simple remedies by pharmacists who have made the components themselves, and who can guarantee their trustworthiness. This too will be brought about gradually by improved pharmaceutical education, and by that only. It would be unwise to provide for pharmacists any modified medical education. Let there be no pretence of professional medical treatment mixed up with pharmacy. Let the druggist's recommendation of simple remedies be founded on that knowledge and experience which comes of much pharmaceutical familiarity with remedies, and on that common sense and perception in all that pertains to drugs, with which a properly and specially educated pharmacist may be credited. Indeed, any trespassing on the purely medical domain would necessarily sooner or later involve commensurate punishment.

*Pharmaceutical Legislation.* The old partnership of *Chemists and Druggists*. *Pharmaceutical Organisation.*—A few words must be added on each of these subjects.

#### LEGISLATION.

As regards legislative enactments that will enable pharmacy better to perform her duties to the State, they

must always be of two kinds—each complementary to the other. First, those designed for the well-being of the public; second, those which provide for the well-being of the pharmacist. It is to the interest both of the public and the druggist that the sale of poisons should be restricted; it is to the interest of both that the sale of compounded drugs should be restricted. For a State to assert that druggists must be qualified is only, in other words, to proclaim that drugs should not be sold by unqualified persons: the one proposition is involved in the other. It is law that the British druggist must be qualified. The health and welfare of the community has called this law into existence. Why? Because the health and welfare of the community are endangered if this dealer in drugs is not qualified. To this end the law has labelled him alone "Chemist and Druggist." From this point of view a Pharmacy Act which provides for the qualification of drug-vendors without rendering penal the vending of drugs by unqualified persons is simply incomplete. It is no answer to this argument to say that the State, by protecting the title "Chemist and Druggist," has only adopted means for the proper supply of drugs to those of the public who cannot judge for themselves, and who desire State guidance, and that to go farther than this would be to interfere with freedom. *Carcat emptor* does not apply here, however good the judgment for other things may be. For no ordinary purchaser is able to judge of drugs. It is too bad to expect him even to judge of the qualifications of the vendor solely by the presence or absence of the words "Chemist and Druggist" in connection with the shop, for the time-honoured coloured show-bottle and a display of senna, rhubarb, &c., forms the commoner test. To provide for the well-being of the public who cannot judge of drugs for themselves something more than the test of title should be allowed. But in truth no such indirect mode of providing the public with qualified druggists will suffice for the public welfare. The only way in which the welfare of the public, as far as it is affected by drugs, can be provided for, and harm to the public, as far as it may come from drugs, be provided against, is not only to enact that druggists must be qualified, but that drugs must not be sold by unqualified persons. This is already enacted for a certain small number of drugs named in a schedule to the Pharmacy Act of 1868, and deemed poisons. So far so good. But all drugs are, more or less, poisons. The sale of all drugs should be thus restricted. If there are any substances sometimes used as drugs, but so harmless, and so generally used for other purposes, that to restrict their sale would be inconvenient to the public, let such drugs alone be scheduled as those which may be sold by unqualified persons. A pharmacy act which provides for the qualification of vendors of drugs, but contains no clause preventing the sale of drugs by unqualified persons, is incomplete. And if our own Pharmacy Acts are thus incomplete, the sooner they are rendered complete by an extended Pharmacy Act, the better for the State, the pharmacist, and the public. To get our legislature to take an interest in this matter, and to view it in its proper bearings, should be the only difficulty in the way of obtaining legislative enactments which will better enable British pharmacy to perform her duties to the State. This is no mere matter of class legislation, but a subject of considerable national importance. Let us only take care that the thoroughness of our pharmaceutical education fully demands, or warrants such legislation, which it will do when founded not alone on that very inefficient test termed "a pass examination," but also on a properly-arranged public curriculum diligently followed for an appropriate period.

#### CHEMICALS.

*"Chemists" and Druggists.*—An address on the relation of pharmacy to the State should include, at all events in Great Britain, some allusion to that part of the implied duty of a pharmacist to his country covered by his use of the designation or title of "Chemist." The English pharmacist is a "Chemist and Druggist." From what has already been stated, it will be clear that the proper standard as regards such a "chemist" is that of a man who is not only a vendor of chemical substances, but who has sufficient professional knowledge of chemistry to enable him to guarantee analytically every one of his drugs and chemical substances that admits of chemical assay. And there are large numbers of



pharmacists in this country who can do all this and more. But does the average chemist and druggist of to-day come up to this standard? Is he even a general trading chemist? Is he not rather a man who has left to the oilman and the grocer the vending of "soda," and other alkalies, vinegar and other acids, delicate mineral and vegetable dyes and colouring matters, and hosts of such "chemicals," as they are termed; a man who, while calling himself and legally appropriating to himself the title of "chemist," has, through his ignorance of chemical substances, allowed chemists, who dare not call themselves chemists, to establish shams for the sale of photographic and other chemicals, and chemical and physical apparatus generally; a man who, through being unable to perform such simple chemical operations as the testing of a fluid excretion for albumen or sugar, has driven from his doors the physic-taking patient afflicted with diseases of the albumenoid or saccharoid type; and a man who has committed these sins of omission, not always because his time was wholly occupied with the pursuit of pure pharmacy. Can such "Chemists and Druggists" wonder that their calling is declining in this country, when even for chemical guarantees of the genuineness of their goods they must rely on the distant wholesale manufacturer, and for the pharmaceutical attractiveness of prettily-coated pills, they find it necessary to go to the other side of the Atlantic? Will the rising generation of pharmacists allow this state of things to continue? No doubt a great deal of the work of the pharmacist of fifty or one hundred years ago has gone never to return, but a vast amount of new work has taken the place of the old. Chemistry is progressing with a rapidity unexampled in the annals of man's avocations. The trade in the materials and apparatus for the study and the practice of chemistry by amateurs, professional men, and manufacturers is extending year by year. Will trading "chemists" allow this chemist's trade to slip through their hands? At no previous period in the history of this country has the subject of purity of food, drink, drugs, and all other things occupied so much attention as at present. Never was there a greater demand on the part of the public, not for direct analysis at the request of ordinary purchasers by officials under the Acts relating to adulteration—that Parliamentary scheme (Act of 1875, section 12) has entirely failed—but for the personal guarantees of vendors that articles sold are what they are professed to be. Who so well able to give this guarantee as the "Chemist and Druggist," who is a chemist as well as a druggist. Such a chemist will extend his trade over the whole commercial area of chemistry, as well as draw to himself those pharmaceutical streams now flowing in channels uncontrolled by pharmacists. There is also minor professional work to be done by the "chemist" in such directions as those already indicated—work chiefly qualitative, and for which the chemist and druggist would perhaps only receive silver fees, but for which he would be remunerated over and over again in the confidence reposed in him by his customers, and by the medical practitioners of the neighbourhood, and in the prestige and status it would win for him.

#### ORGANISATION.

A word respecting organisation amongst pharmacists. Organisation, in the absence of which any consideration of improvements in the mode of collecting, elaborating, or distributing drugs would be little more than a dream. Organisation, without which the duties of chemists and druggists to the State will only be performed in an incomplete and haphazard manner, and without which their own interests will be developed or maintained very imperfectly if at all. Such organisation—the work of a generation of philo-pharmaceutic pioneers—exists already in this country as regards about one-third of the chemists and druggists. Had the other two-thirds responded to the general appeals made by their brethren more than once during the past forty odd years, it is safe to aver that not only would the State at this moment be better served by pharmacy, but every pharmacist would be richer in pocket, richer in social position, richer in self-respect. Even now, were the advantages of union brought home to every pharmacist—which could be well done now that we have a complete Register—there can be little doubt that nearly every druggist having any really important stake in pharmacy would join in forming a Pharmaceutical Society of Great

Britain co-extensive with British pharmacy. It would be astonishing, indeed, if after such a special appeal any very large proportion of the druggists in the country were found to care so little for the welfare either of themselves or of the community, or to perceive that welfare so imperfectly, as to hold aloof from such an organisation. But our chief hope must rest with our pupils and young men. Cannot some plan be carried out by which all future pharmacists shall become members of one great national society?

#### CONCLUSION.

In the course of this address on an aspect of pharmacy complementary to the political, an attempt has been made to set forth the duties of pharmacy to the State in obtaining, elaborating, and distributing drugs; suggestions have been offered by which pharmacy may better perform these duties; hopes thrown out respecting the duty of the State to pharmacy (though this, being a political question, has only been glanced at); and for the thoroughly qualified chemists and druggists of Great Britain generally a brighter future foreshadowed than might at first sight be anticipated. Amongst the body there are large numbers who can well hold their own with the pharmacists of any country in the world, whether as followers of pure pharmacy or as "chemists" as well as "druggists." All that these are now, the rising generation of pharmacists should strive to become. With a thoroughly united, thoroughly educated, body of pharmacists, in number properly proportionate to the population of the country, each pharmacist a unit in one great society of pharmacists, we may confidently predict for no very distant future a relationship between pharmacy and the State which shall be permanently beneficial to all concerned. We too

. . . . . rest in faith  
That man's perfection is the crowning flower,  
Towards which the urgent sap in life's great tree  
Is pressing—seen in puny blossoms now,  
But in the world's great morrows to expand  
With broadest petal and with deepest glow.

A vote of thanks to the President for his address was moved by Mr. CHIPPERFIELD, who, besides expressing his sense of the great interest and ability of the address, said it had always seemed to him a manifest anomaly and a glaring injustice that the pharmacist should be required to undergo an expensive education, and should then have no safeguard of his privileges. He regarded the mere scheduling of a few poisons as no protection either to the pharmacist or to the public. Professor Attfield's proposition, that if druggists were required to be qualified the sale of drugs by unqualified persons should be made penal, was incontrovertible. The difficulty he had felt in asking that this should be so had always been in regard to sparsely-populated districts. He considered that Professor Attfield's suggestions entirely disposed of that difficulty.

Mr. O. R. DAWSON seconded the vote, and Dr. QUINLAN, Mr. HAMPSON, Mr. ATKINS, and Mr. TICHBORNE made some comments on the address.

THE PRESIDENT, in acknowledging the vote, said that, to quote the words of his predecessor, he had endeavoured to take a good straight look at things as they were, and then to have a common-sense look at things as they should be. For his efforts, such as they were, he was abundantly rewarded by the manner in which his address had been received.

The reading of papers was then proceeded with.

#### FIRST REPORT ON THE DIFFERENCES BETWEEN THE ESSENTIAL OILS OF CINNAMON AND CASSIA.

*By A. H. Jackson, B.Sc., Ph.C.*

For this investigation the Conference had made a grant of 10*l.* for materials.

The oils were distilled by Mr. Umney from carefully-selected samples of barks. In both cases the barks practically yielded  $\frac{1}{2}$  per cent. of oil on distillation.

The author aimed to treat both oils in a similar way, in the hope of separating some product from the one that is either not contained in the other, or is contained in a different proportion.



In taste cinnamon was found more fiery than cassia. Authorities differ as to the effects on polarised light, which, however, appears to be very slight in either case. The author fixes the density of cassia at 1.0366, and cinnamon at 1.0097 in vacuo and compared with water at its maximum density. Experiments on the refractive energy of the two oils were also conducted, but it was inferred that neither the relative densities nor the refractive energies are sufficient guides in distinguishing mixtures of these oils.

A very careful chemical examination was recorded, the result of which was to show that the oils consist chiefly of cinnamaldehyde, together with small quantities of cinnamic acid, resins, and unexamined hydrocarbons. The acid and resins are probably due to oxidation of the oil, as they increase in amount with age and exposure.

By fractional distillation, and by treatment of the oils with a saturated solution of potassium bisulphite, so as to take up the cinnamaldehyde, and filtering the residue, some residue was obtained. In this it is supposed any points of difference exist, but only very small quantities are left for investigation.

The PRESIDENT said pharmacists had long wanted to know wherein consisted the difference between the oils of cinnamon and cassia, and he was sure the Conference would thank Mr. Jackson for the labour he had bestowed on the subject. He perceived that Mr. Jackson had confirmed the general observation that the specific gravity of oil of cinnamon was lower than that of oil of cassia. The special difference between the oils seems to lie in something so minute that it became a question on which the Committee would be glad to have Mr. Jackson's advice as to whether it was worth while to proceed further with the investigation.

#### ON THE ALKALOIDAL VALUE OF BELLADONNA PLANTS AT DIFFERENT PERIODS OF GROWTH.

By *A. W. Gerrard, F.C.S.*

At last year's Conference Mr. Gerrard presented a first report on this subject, in which he demonstrated the relative atropine values of cultivated and wild belladonna plants. The wild variety was found to be richest in atropine, and, contrary to general opinion, the leaf in both varieties was shown to be richer than the root.

In continuation he had examined this summer two specimens of the first year's growth of the plant, likewise the second year's growth, at three periods of its development, viz., before flowering, during flowering, and after flowering, with the object, as regards the second year's plant, of deciding at which of the above periods it attains its maximum therapeutic value.

Immediately on receipt of the fresh plants the leaves and roots were separated and well dried, the estimation of the alkaloid being completed in less than a month from the time of collection. This rapidity of manipulation was considered advisable, so as to avoid as much as possible those changes plants undergo by keeping.

The process now followed for the estimation of the atropine is a slight modification of that previously described, the difference being that a volumetric in place of a gravimetric process is now used. The ethereal alkaloidal residue is titrated with a centinormal sulphuric acid, 100 parts of which is made to exactly neutralise 1 part of pure atropine. The atropine residue being but sparingly soluble in water, it is dissolved in alcohol, and coloured with tincture of litmus, so as to clearly indicate the critical points.

This method is both rapid and accurate, as proved by tests of atropine, both commercial samples and specimens produced by the author. Incidentally the accuracy of the test shows that atropine is a pure substance.

The two specimens of the first year's plants examined were uncultivated—one grown in Yorkshire on a chalky soil, the other in Sussex in leaf mould. Neither appeared to have flourished. The Yorkshire plant yielded .21 per cent. of atropine from the roots and .23 from the leaves; the Sussex plant gave .09 per cent. from the roots and .22 from the leaves.

This experiment shows that the plant, in the first year of its growth, contains about one-half the quantity of atropine present in older plants. The first year's plant is never collected for druggists' use. The result confirms what the author has previously stated, that a chalky soil favours the formation of atropine.

#### Examination of Second Year's Plant.

The cultivated only was subjected to analysis. It was grown by Mr. Ransom, of Hitchin, and gathered in May, June, and July,

June being the month when it is usually collected for druggists' use. The percentages of atropine were as under:—

When Collected	Leaves	Root
May .. .. .	.25 .. .. .	.21
June .. .. .	.36 .. .. .	.32
July .. .. .	.34 .. .. .	.32

This result shows that at the period of flowering the full development is reached, and is maintained into the fruiting season. The experiment also shows a simultaneous development of root and leaf, and not the exhaustion of the former to strengthen the latter; so that the inference is that root and leaf should be gathered at the same period.

Throughout these experiments, as on former occasions, the leaves have uniformly yielded more atropine than the roots.

The PRESIDENT remarked on the strictly pharmaceutical character of this paper. Considering the powerful effect of the alkaloid, such a report as this must be of extreme importance. He presumed Mr. Gerrard, when alluding to atropine, referred, as he had explained last year, to the total alkaloid obtained.

Mr. WILLIAMS asked if the percentage of alkaloid obtained was reckoned on the dried or the fresh plant.

Mr. NAYLOR, observing that the process of obtaining the alkaloid now recorded was somewhat different to that described last year by Mr. Gerrard, would like to know if the results now obtained were strictly comparable with those reported last year. He would suppose that as the previous process was a longer one, some greater loss of alkaloid would result.

Mr. EKIN, presuming that Mr. Gerrard would continue his investigations, hoped he would examine closely the reaction he obtained with the centinormal sulphuric acid in neutralising the alkaloid. He would hardly have thought in such an experiment litmus would be sufficiently delicate. He suggested methyl orange as probably a more exact indicator. Further, he thought it necessary they should be cautious in drawing deductions as to the relative value of cultivated and uncultivated plants from the examination of a very few specimens.

Mr. MARTINDALE pointed out that Mr. Gerrard's process would estimate the whole of the alkaloid in the plant crystallisable and uncrystallisable as well.

Mr. PLOWMAN asked if the "parts" of sulphuric acid referred to were parts by volume? He pointed out that working on such small quantities gravimetric tests were very difficult of application.

Mr. HOLMES had always observed that belladonna flourished more luxuriantly on a calcareous soil than on any other soil, and Mr. Gerrard's experiments seemed to show that the plant from such a soil was also richer in alkaloid.

Mr. GERRARD, in reply to the comments which had been made, said he called the total alkaloid he obtained "atropine," though there was some little uncertainty as to whether it was a single alkaloid or a compound of two or more. Comparing his recent experiments with those of last year he found the results slightly higher now, but not much so. Mr. Martindale spoke of an uncrystallisable residue in the alkaloidal residue. He had always found that what was called uncrystallisable was really capable of crystallisation. What he had obtained was all crystallised. He had referred to parts of sulphuric acid by volume.

#### A NEW STYPTIC OF INDIGENOUS GROWTH.

By *Professor Quinlan, M.D.*

ABOUT a year ago Dr. Quinlan had seen the chewed leaves of the *Plantago lanceolata* successfully used to stop a dangerous hæmorrhage from leech-bites in a situation where pressure could not be employed. He had searched out the literature of the subject, and found that although this herb is highly spoken of by Culpepper and other old writers as a styptic, and alluded to as such in the plays of Shakespeare, its employment seems to have died out. Professor Quinlan described the suitable varieties of plantain, and exhibited preparations which had been made for him by Dr. J. Evans, of Dublin, State apothecary. They dried leaves and powdered leaves, conserved with glycerine, for external use; the juice preserved by alcohol, as also by glycerine, for internal use; and a green extract. He gave an account of the chemistry of the juice, from which it appeared that it was not a member of the tannin series; and also described its physiological effect in causing a tendency to stasia in the capillaries of the tail of a goldfish, examined with a microscopic power of 400 X. He regarded its styptic power as partly mechanical and partly physiological. The juice in large doses he had found useful in internal hæmorrhages. The knowledge of the properties of this plant he thought would be useful in cases of emergency, because it could be obtained in any field and by the most un instructed persons.

The PRESIDENT, in thanking the author for his paper, said it would be interesting to hear Dr. Quinlan's opinion on the action of styptics: whether they acted mechanically or chemically, or both chemically and mechanically.

Dr. TICHBORNE said no doubt many valuable old remedies had been too much neglected. Dr. Quinlan had given good reasons for resuscitating this one. Would he say whether the succus which he had exhibited had been prepared in a stone, iron, or brass press? He observed that it had a



rather dark colour. Dr. Quinlan had stated that no tannin was present, as it gave no reaction with salts of iron. Had he examined it for catechic acid, which, as a rule, did not give a reaction with iron?

Mr. GILES mentioned another valuable old remedy, the *Scrophularia nodosa*, which was a very valuable application for boils.

Mr. GERRARD asked if Dr. Quinlan had used the remedy internally for diarrhoea. He had spoken of the glycerine preparation which had been made as a substitute for the alcoholic in order to test it on the capillaries. Mr. Gerrard hardly understood this, as glycerine was itself an alcohol, and had an irritant effect on the capillaries.

Mr. PLOWMAN said the experiments with the styptic on the tail of a gold-fish might explain, by examination of the small blood-vessels, whether the action were chemical or mechanical.

Mr. BROWN suggested that the process of chewing might develop the styptic properties. If such were found to be the case it might lead to the identification of the particular part of the plant which yielded the styptic character.

Mr. SCHACHT suggested a microscopic examination of the plant to see if there were any hairy portion which might exercise the well-known power of coagulating the blood by distribution.

Mr. POLLARD objected to the term "linctus" as applied to a preparation for external application.

Mr. SOUTHALL said that though there was undoubtedly a want of knowledge respecting our indigenous plants, much information could not be gathered from the books of the old herbalists, who generally described the characteristics of plants by a few sets of phrases. The subject admitted considerable research.

Mr. BORDLAND wished to know at what season the plantains had been gathered. In Scotland the plant had long been used as a styptic, and it was not uncommon for the long leaves to be bound round a cut finger, but he was not previously aware that they acted otherwise than by pressure.

Dr. QUINLAN said a great many valuable suggestions had been made, for which he was greatly obliged, and of which he would take note. The succus had been prepared in a marble mortar. Suggested by Mr. Giles's mention of another useful old plant, Dr. Quinlan went on to speak of another he had heard of which was good for whooping-cough. He had forgotten its name. It was *Star something*. In reply to Mr. GERRARD he had not used the preparation for diarrhoea, but he had experimented with alcohol and glycerine side by side, and had found that the former had an effect on the capillaries while the latter had none. The plants from which the preparations had been made had been collected in May.

#### SOME EXPERIMENTS ON ENGLISH OIL OF LAVENDER.

By W. A. Shenstone.

MR. SHENSTONE reports on some experiments which he made some time ago, to which some interest is given by the results published in 1879 by M. Bruylants, who had experimented with oil from the French lavender flowers. M. Bruylants obtained 25 per cent. of a terpene boiling at 162° C. from this oil, and inferred the presence of camphor and borneol to the extent of 65 per cent. In his experiments with English oil of lavender Mr. Shenstone found that the quantity of terpene is much smaller; he obtained something less than 1 per cent. of impure terpene after much labour, though no doubt the waste would be considerable. Mr. Shenstone found that the strongest freezing mixtures, such as solid carbon dioxide and ether, failed to cause the separation of the crystalline constituents which this oil has been supposed to contain, and also that concentration by distillation under reduced pressure, so as to avoid overheating, and subsequent examination of the residue failed to give evidence of the presence of such substances. The constituents of higher boiling-point were only incompletely examined. A portion boiling at about 200° C. was analysed by Dr. G. H. Morris, and found to contain a large percentage of oxygen, and was not, therefore, a hydrocarbon, having for formula  $C_{10}H_{16}$  as has been stated. The experiments of M. Bruylants and others decidedly seem to show that after treatment with oxidising agents the higher boiling portions of lavender oil yield camphor, and the author is disposed to consider that the oil consists chiefly of one or more liquid oxygenated bodies from which this camphor is derived, mixed in the case of the French oil with a considerable percentage of terpene, and in the case of the English oil with a very much smaller quantity of terpene. The terpene obtained from the English oil had not the characteristic odour of lavender flowers.

Mr. JACKSON asked if Mr. Shenstone had examined the terpenes from the French and English oils optically before assuming them to be similar.

Mr. SHENSTONE said he had intended to have done so, but that after the experiments he had detailed all his materials had been destroyed in a fire.

#### TERPIN HYDRATE; ITS PREPARATION AND CRYSTALLOGRAPHY.

By R. H. Parker.

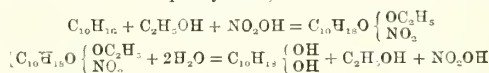
THE subject was brought under the notice of the author by some crystals found in a jar of "furniture oil," many of which were remarkably well formed. Analysis proved them to consist of terpin hydrate. A sample of the furniture-oil was made and kept four

years, but no crystals were produced, showing that their formation required peculiar conditions, the nature of which was not quite clear. Some doubt existed as to the composition of the oil in question, but it was believed to have consisted of linseed oil, chloride of antimony, methylated spirit, and turpentine. Terpin hydrate may be prepared from a mixture of turpentine, nitric acid and alcohol; the various processes recorded by Wiggers, Deville, Berthollet, and Tilden were tried, and, as several failed, experiments were conducted in order to arrive at the best method of preparation. Strong nitric acid was found under all conditions to give unsatisfactory results, and when in direct contact with the turpentine, explosive ebullition followed. Nitric acid of sp. gr. 1.25 was found best adapted for the purpose. Insulation did not appear to influence the result to any important extent. The liquid mixture should be in shallow layers, and occasionally agitated. A more abundant and colourless crop of crystals was obtained by using rectified in place of methylated spirit, and by excluding air from contact with the liquids, but the advantage gained did not counterbalance the increase in cost of production. Turpentine should be used which has not been too much exposed to air. The following process was finally adopted:—

Mix one volume of nitric acid, sp. gr. 1.25, with one volume of methylated spirit, cool, place the mixture in a shallow glass dish and float upon it two volumes of oil of turpentine; rotate the vessel occasionally, and in three or four days crystals appear; allow to remain undisturbed for about 14 days, collect the crystals on muslin, wash with cold water, drain, and dry by exposure to air; recrystallise, if necessary, from slightly-diluted alcohol.

The two layers soon acquire a straw tint, which changes after a few weeks to deep red; the change of colour was much lessened by excluding air. Most of the terpin is deposited in the first fortnight; the total produce is one-third of the weight of the turpentine used. The remaining two-thirds is converted into an aromatic oil, which may be distilled in a current of steam; the distillate gradually increases in specific gravity from 0.896 to 0.921, all of similar odour. After deposition of terpin, the two layers were separated, and it was found that the upper layer, placed on a fresh mixture of acid and alcohol, gave scarcely any more terpin, while the lower layer did not appear to lose its power to produce crystals when successive layers of fresh turpentine were floated on it.

The author's results agreed in the main with those obtained by Tilden (*Journ. Chem. Soc.*, 1878), but the use of a weaker acid was found necessary. The equations there given, representing the mode of formation of terpin hydrate, are as follows:—



There being an intermediate formation of a compound of terpinol with ethyl nitrate; but this does not account for the fact that only one-third of the turpentine is converted into terpin hydrate.

The crystals of terpin hydrate, as first deposited, are often extremely well formed and remarkably brilliant. They belong to the fourth system, being a combination of the rhombic octohedron and prism, in which the faces of the former are dominant.

The specific gravity of terpin hydrate was found to be 1.09 at 17.5° C.

The solubility of terpin hydrate in alcohol, sp. gr. .825 at 20° C., is 1 in 13; much increased by heat; in distilled water at 20° C., 1 in 350; in boiling water, about 3 per cent.; slightly soluble in chloroform, carbon, carbon bisulphide, ether, and benzol, scarcely in turpentine. One part of terpin heated with 11 of alcohol does not crystallise in 48 hours, while 1 in 13 cold does not entirely dissolve until that period expires.

When examining the original furniture-polish crystals for nitrogen, by heating with soda lime, a peculiar aromatic odour was observed. Following this observation, the author distilled a mixture of terpin with lime over a column of lime heated to low redness, and obtained a liquid yellowish oil of powerful aromatic, camphoraceous odour, to some extent recalling that of yarrow and cajuput, and yet quite distinct. The quantity obtained was insufficient for complete examination.

THE PRESIDENT, in conveying the thanks of the Conference to the author, said it was interesting that so much science should have flown from a bottle of furniture polish. What was obtained from such a bottle depended largely on who had drawn the cork.

Mr. SHENSTONE said he believed that terpin hydrate crystals could only be successfully prepared by the use of nitric acid. He pointed out that if it was certain that the crystals had been formed in the furniture-oil mixture named by Mr. Parker, Dr. Tilden's explanation of its formation, given above, would no longer be sufficient, and that, therefore, it was very desirable to know, if possible, the exact composition of the mixtures.

Dr. TICHBORNE said that some years ago he had prepared a good deal of terpin hydrate, and at that time had discovered a relative body which he had called colophonic hydrate. He described the method he had adopted to obtain the crystals, which were readily distinguished from terpin hydrate by their greater solubility in water. Large crystals of terpin hydrate might be obtained by spontaneous evaporation of an alcoholic solution.

Mr. GILES asked if the composition of the furniture oil had been ascertained by analysis.

Mr. PARKER said the reason why he could not tell the composition of the furniture oil was that it had been made in a pharmacy where it was not much sold, and was made sometimes from one formula and sometimes from another. He did not think, however, in any case it could have contained nitric acid. Dr. Tichborne's observations were very interesting. He did not think, however, the production of large crystals depended so much on what solvent was employed as on the presence of certain other bodies, probably by-products, during the process of crystallisation.

#### ON A NEW METHOD OF MAKING A VOLUMETRIC SOLUTION FOR DETERMINING THE HARDNESS OF WATER.

By C. R. C. Tichborne, F.C.S.

THE author stated that he read this paper before this Conference, because he considered that the Pharmaceutical profession was the proper body from which analysts should be selected.

It was remarked that to determine the hardness in waters we have never been able to improve, or modify, to any extent the original process of Dr. Clarke, invented nearly half a century ago. The most important proposals have been made in connection with the making of the soap solution and the standard calcium solution used for titration. Dr. Clarke used a soap made from animal fats (curd soap), and it has been respectively proposed to use a soft soap made from olive oil, lead soap (*emp. p'umbi*), or a soda soap of olive oil (Castile soap). These are undoubtedly better than curd soap, as the fatty acids in the others mainly consist of oleic acid, and the oleates are less prone to separate in cold weather.

Dr. Tichborne now proposes to prepare a definite oleate of soda to replace the somewhat variable soap solution. He points out in this paper that oleic acid forms a monobasic and a dibasic salt. Either answer for the purpose.

The following is the process:—

Five c.c. of oleic acid are measured with a pipette and 50 c.c. spirit added to it in a beaker; 2 drops of phenolphthalein solution are also added, and immediately a volumetric solution of soda is run in until a pink indication is produced. This indicates that the point of neutrality has just been passed. The result is a solution of the monobasic salt. A drop more of the volumetric solution of soda develops the pink to a magenta, but, as the process goes on the solution again becomes decolorised, indicating the formation of the dibasic salt. When half the second equivalent of soda has been added the solution begins to pectise, and when the process is complete the solution becomes a solid jelly. Whichever solution is made (the author prefers the latter, as it lathers more freely and is more permanent), the oleate of soda is then made up to the required measure by the addition of a mixture of equal parts of rectified spirit and distilled water.

The advantages claimed are that the soap solution may be made in five minutes, requires no titration against a standard water, and is more permanent than those made from ordinary soaps.

THE PRESIDENT commented on the advantage of having a definite solution of oleate of soda rather than an indefinite one like that of soap. He expressed some surprise at the statement that the solution would keep for any length of time.

Mr. EKin, in noticing Dr. Tichborne's statement that the addition of alkali after the monobasic salt had been obtained, formed a gelatinous solution, asked if it was possible that he had thereby a soap insoluble in the first solution? The soap he had found best adapted for the test was Pear's transparent soap. He recognised the advantage of having a solution always at hand.

Mr. JACKSON asked if any other indicator of alkalinity besides phenolphthalein had been used. Would litmus answer?

Dr. TICHBORNE, in reference to the President's remarks, said he did not think the solution would keep perfectly. A slight crystalline formation cannot be prevented, but it never separated like the soap solution. In reply to Mr. Ekin he said his reason for thinking the pectose was a definite body was that it behaved as such when placed on a dialyser. Litmus was not applicable as an indicator. In fact, in his experience litmus was the worst indicator they could have. It was extremely difficult with litmus to detect the exact point of neutrality.

#### NOTES ON BRAZILIAN DRUGS.

By Charles Symes.

THE author exhibited and described three Brazilian drugs, known respectively as "Resin de Angico," "Almasca," and "Guassatunga." The two former are products of the district of Maranhão, in the north of Brazil, the latter comes from the south.

**Resin de Angico.**—This is not a resin but a gum, of a deep brownish-red colour, translucent, and breaking with a bright shining fracture. It occurs in pieces of from 1 to 3 oz. in weight, some of which have portions of bark attached to them. In the "Formulario ou Gui Medica" of Chirnoviz it is mentioned as the product of *Acacia Angico*, and is said to be good for chest complaints; the same tree yielding an astringent bark. The author described the effect of treating it with water.

**Almasca.**—This substance, received in sausage-shaped masses of about 12 inches in length and 2 to 3 inches in diameter, and covered with dried leaves, is evidently a species of elemi. It comes from the same district as gum angico, but without any particulars of its use there. It is a soft grey-looking resin, with whitish crystalline masses, diffused more or less frequently through it, and possesses an aromatic, fragrant and somewhat penetrating odour.

**Guassatunga.**—On a recent visit to the South of Brazil, Mr. Joseph Hallowell found in use there a popular native remedy for snake-bite in the form of an alcoholic tincture of a golden-yellow colour, put up in small bottles, with a label in Portuguese stating that it was for the bites of snakes and other venomous reptiles, and was to be taken in one-drop doses, and also applied to the wound in a diluted state.

The tincture is made from the bark of guassatunga. The author had made a tincture from the bark, which, treated with the usual reagents, gave characteristic indications of the presence of an alkaloid, and he had, in fact, separated a small quantity of such a body in a crystalline form, but only sufficient for examination with the microscope. He hoped to investigate it further.

THE PRESIDENT said it was very desirable to have accurate information concerning drugs which were likely to come into general use.

Mr. ATKINS thought the line of investigation adopted was worth following. When we find the natives of other countries resorting to certain vegetable remedies, it is always worth while for us to examine such medicines. He had lately received from a friend who had gone to the Congo a plant used by the natives there as a styptic. He intended to hand it over to some one who would be able to properly examine it. He often wondered the hael plant so largely used in India had not come into more general employment in this country.

Mr. GROVES said it would have been desirable to have made some experiments with these drugs on the lower animals. He reminded the Conference that Dr. Symes could not have given a dose to a mouse without a licence under the Vivisection Act, a condition of things which he regarded as a great obstacle to science.

#### HALF AN HOUR WITH A FEW SHEETS OF THE NEW PHARMACOPEIA OF THE UNITED STATES OF AMERICA.

By Professor Attfield, F.R.S.

PROFESSOR BEDFORD, President of the American Pharmaceutical Association, had sent to Professor Attfield, as President of the British Pharmaceutical Conference, the first 144 pages of the new United States Pharmacopœia. In this paper the author proposed to give some information respecting this new pharmacopœia. After describing the size of the pages and the type used, it was stated that the former division into "Materia Medica" and "Preparations," and the latter into over 60 sub-classes, is no longer maintained. The work is now simply in alphabetical arrangement like British Pharmacopœia.

The system of chemical nomenclature suggested by the author, and adopted in the 1870 United States Pharmacopœia, had been retained.

Weights and measures are expressed by parts, and in cases in which some notice of volume as well as weight is required the metric decimal system is employed.

The first seven pages of the Pharmacopœia (exclusive of prefatory matter, which has not yet come to hand) are almost wholly occupied with a new class of compounds termed **ABSTRACTS**—Abstracts of aconite, belladonna, conium, digitalis, hyoseyamus, ignatia, jalap, nux vomica, podophyllum, seneza, valerian.

These "abstracts" are alcoholic extracts mixed with sugar of milk and rubbed to powder, and of such a strength that one part represents two parts of the original root, leaf, &c.



Other additions, to go no farther than the letter A, are acidum boricum, acidum hydrobromicum dilutum, acidum oleicum, acidum salicylicum, æther æceticus, aluminii hydras, ammonii phosphas, amyl nitris, amylum iodatum, apomorphinae hydrochloras, auri et sodii chloridum.

Aconitia is omitted, atropina retained. The root only of aconite is employed. Alcohol amylicum is omitted. Aloe Socotrina is the only variety recognised. Both varieties of aralia are dismissed. Acidum muriaticum has become acidum hydrochloricum, aqua chlorinii is now aqua chlori, sulphurets are now sulphides.

Doses are not given; temperatures are stated in centigrade degrees, with the Fahrenheit equivalents in brackets. Chemical symbols are now added. Cinchonidine sulphate, codeine, simple elixir of orange, eucalyptus leaves, fluid extract of guarana, extract of malt, fluid extract of pilocarpus, are noticed as novelties.

The author said that critical remarks would be at present out of place, but he believed that much labour had been worthily bestowed in this sixth decennial revision.

This paper was read out of its order on the programme in order that Dr. Redwood, then present, might make some comments on it.

Professor REDWOOD said his remarks would be but few in number. He agreed with Dr. Atfield that the present was not the occasion for a critical review of the new United States Pharmacopœia. When the work reaches us in a complete condition it would, he was sure, command the most careful attention, and the conclusions of the American committee would be considered very valuable by those engaged on a similar work in this country. He might remark broadly and generally that those who prepare the Pharmacopœia in this country are far more conservative than the Pharmacopœia Committee on the other side of the Atlantic. He had no reason to anticipate that any such sweeping changes would be introduced into the British Pharmacopœia as were manifest in that of the United States. The principle acted upon here, he believed, was that we were not justified in introducing into the pharmacopœia preparations not actually in medical practice—such preparations, for example, as the "abstracts" which Dr. Atfield had described. Some changes, no doubt, would be introduced. He expected that the system of nomenclature proposed by Dr. Atfield would be adopted. With regard to weights and measures, some changes would no doubt be made. He had himself long ago advocated that quantities should be ordered by parts, as was done in the United States Pharmacopœia, but he was not able to anticipate whether that particular system would be adopted. It appeared to him the most natural course to pursue. To adopt a system which had not been studied by many medical men and pharmacists would occasion much opposition. The metric system was recognised in the Pharmacopœia, but even the Americans had hesitated to adopt it entirely. He had only had a hasty glance through these first pages of the new United States Pharmacopœia while Dr. Atfield had been reading his paper, and therefore he could not now comment on them; but he repeated his assurance that the work would be fully examined when it was received.

#### ON SOME REACTIONS OF ARSENIC.

By W. A. H. Naylor and J. O. Braithwaite.

ONE of the authors in experimenting three years ago on the action of certain reducing agents on arsenic acid had tentatively employed oxalic acid, but had concluded that it could not readily be applied to the purpose of reducing arsenic compounds. Subsequently, however, M. Patrouillard, in the *Répert. de Pharmacie*, iii. 582, has reported that in his hands oxalic acid had proved completely successful, and his results have been adopted in a standard text-book of chemistry in these words:—"Arsenic acid is easily reduced to arsenious by the action of reducing agents such as sulphurous or oxalic acid ( $\text{H}_3\text{AsO}_4 + \text{H}_2\text{C}_2\text{O}_4 = \text{H}_3\text{AsO}_3 + \text{H}_2\text{O} + 2\text{CO}_2$ )."

The authors then recorded a number of experiments in which, following M. Patrouillard's directions, or devising new conditions themselves, they had tested this all-gel power of oxalic acid to reduce arsenic to arsenious acid. In no case was the reduction appreciable, and they at last concluded that oxalic acid exerts no reducing action under the conditions described by Patrouillard and themselves.

Passing from this subject the authors described a modified Fehling's solution which they had prepared as a test for arsenic. It is based upon the fact of the solubility of cupric arsenate in the double tartrate of potassium and sodium. Their formula has the following proportions:—

Cupric sulphate recrystallised	..	..	..	200 gram
Water to measure	..	..	..	50 c.c.
Dissolve.				
Tartarated soda, crystallised	..	..	..	500 gram
Caustic soda	..	..	..	5.00 grams
Water to measure	..	..	..	50 c.c.
Dissolve.				

The two solutions are kept separate, and mixed in equal proportions when required for use. The convenience of this mode of em-

ploying the copper test is best realised when search has to be made for traces of arsenite accompanied by much arsenate. By this simple modification the arsenate is held in solution, and the inconvenience of filtering a strongly alkaline liquid, or patiently waiting until the insoluble copper compound has subsided, is obviated. With 1 milligram of arsenious mixed with 2 decigrams of arsenic acid it will give on boiling a decided reaction. Its delicacy is, however, materially impaired by the presence of certain organic acids, as oxalic, citric, acetic, and tartaric. Sulphates and nitrates do not interfere, nor do chlorides, unless present in quantities proportionately large.

Lastly, the authors described a volumetric test for arsenious acid which they had devised. When mercuric chloride is added to a solution of arsenious acid only moderately alkaline, the solution remains clear, and upon standing becomes opalescent to a degree dependent on the amount of arsenic present. If, however, the solution be rendered strongly alkaline with caustic soda or potash, and then a weak solution of mercuric chloride be added, the mercuric oxide at first produced quickly disappears, leaving as before a clear solution which rapidly becomes cloudy, and if set aside gives a greyish deposit of metallic mercury. Again, if the solution be not only strongly alkaline, but boiling the liquid will assume a dark colour the instant the mercuric chloride is added. When the arsenious is all converted into arsenic acid the liquid is coloured yellow. The quantity of mercuric chloride added becomes, therefore, the measure of the arsenious acid present.

THE PRESIDENT spoke of the paper as one of considerable importance, and remarked especially on the direct contradiction which it gave to the statements of M. Patrouillard. No analyst examining a stomach or a wall-paper would dare to say that no arsenic was present until he had reduced any possible arseniates to arsenious acid. M. Patrouillard had stated so positively that oxalic would answer as well as sulphurous acid, that he must confess he had accepted the statement. He hoped M. Patrouillard would, in consequence of this paper, repeat his experiments and clear the matter up.

A few questions were put by Messrs. MERTINDALE, KINGZETT, and BRANSON, to which Mr. NAYLOR briefly replied.

#### SOME RESULTS OF THE ACTION OF THE DIGESTIVE FERMENTS UPON DRUGS.

By George Brownen, F.R.S.

THE purpose of this paper was to call attention to some of the results of the action of solutions of the digestive ferments upon medicinal substances.

Solutions of the gastric ferment were obtained from the stomach of the pig, by means of dilute glycerine and also with acidulated water and alcohol. Pancreatic solutions were also obtained from the pancreas of the pig, by means of glycerine and a feebly alkaline, as well as an acidulated dilute alcohol. The first series of experiments was made with these solutions and crude drugs; the second with definite principles.

An infusion of rhubarb,  $\frac{1}{2}$  oz. to the pint of water, at 50° C., was acted upon by some of the acid solution of pepsin for two hours; 47 per cent. of the rhubarb was thus rendered soluble. The mixture was neutralised by sodium carbonate, the alkaline solution of pancreatin added, and the temperature sustained for two hours longer. The insoluble portion was then found to consist of cellulose and earthy salts, retaining a small quantity of colouring matter. The 240 grains of rhubarb left an insoluble residue of 96 grains. A similar process applied to calumba left an insoluble residue of 172 grains out of 500 grains of the drug.

Cinchona was about half soluble (48 per cent.), and opium about two-thirds, or 68 per cent., but in each case the alkaloids were only partially dissolved. The cinchona tannin was destroyed in the digestive process and failed to precipitate gelatine.

Some experiments with gum arabic suggested that the arabin of gum acacia remained unaffected by the processes, and that such peptonising change as was effected was wrought upon some slight impurity of gum, possibly containing nitrogen.

Other experiments were made upon more definite substances. The acidulated extract of the gastric juice decomposed a watery solution of salicin very slowly and imperfectly; saliretin was formed, but associated with undecomposed salicin. On the other hand, the pancreatic ferment split up the salicin into saligenin and glucose. Jalapin was unaffected by the pepsin solution, but pancreatic digestion withdrew a copper-reducing substance from it.

Santonin was unaffected by gastric and pancreatic solutions. A solution of tannin treated with the acid pepsin solution became turbid, but the turbidity disappeared when a little more hydrochloric acid was added to the mixture. The results of several hours' digestion were, however, negative, but the pancreatic ferment rendered the tannic acid incapable of precipitating gelatine or isinglass, because of the transformation into gallic acid.

The digestive process seems to consist of the hydration or splitting up of insolubles, and the author considers the microzymous or bacteroidal fermentation need not occur until the primary digestion is in an advanced stage.

The emulsive ferment as well as the proteolytic in action produces acidity, although in the emulsification of fat the acidity is generally very slight and insufficient by itself to account for the minute subdivision of large proportions of fat. In the digestion of proteids the acidulous body is glutamic acid, which may also occur in the emulsification of fats, as the author has never been able to find fatty acid and glycerine as separate bodies in emulsified fats in such quantity as would justify him in ascribing emulsification of fat to their formation and presence.

The PRESIDENT remarked that Mr. Brownen had entered on an important field of investigation, and he hoped he would continue his experiments. We know far too little of the action of these ferments and antiferments in promoting the processes of digestion.

Mr. BENGER considered they were indebted to Mr. Brownen for his researches, but he thought his paper would have had additional value if he had given more details. For instance, he would like to know whether the action on rhubarb and calumba had been compared with the action of mere acid and alkaline solutions without the addition of any ferment. Mr. Brownen said that with the acid pancreatic solution he had not found the microzymous or bacteroidal fermentation occur until the primary digestion was in an advanced stage. His experience differed from that observation.

Mr. KINGZETT said a simple acidulated solution would split up salicin, and it was important to know how much of the action was due to the ferment and how much to the acid.

Mr. PLOWMAN said in experiments of this kind it was important to remember that the exact conditions of the natural action could not be reproduced in a laboratory. The vital force might greatly modify the action. He referred to Professor Redwood's experiments on dialysed iron, which seemed to prove that such a preparation was chemically inert, although its medicinal value had been experimentally proved by medical men. He noticed that Mr. Brownen had made his experiments at 50° C., a temperature which of course would never be attained in the body, and a temperature which of itself would have a tendency to break up such a body as salicin. Mr. Plowman further criticised the physiological parts of the paper, most of which have been omitted in the foregoing abstract.

The PRESIDENT said they must not venture to open a discussion on the vital force to which Mr. Plowman had alluded.

Mr. ATKINS hoped he would not trespass on that prohibited ground, but he remembered the case of an Indian who had had a portion of his stomach shot away, leaving to view the processes of digestion. He also remarked on the impossibility of exactly imitating sea water by a mere mixture of the necessary salts with water.

Dr. SYMES said the residues left after the rhubarb and calumba digestions were much about what he should expect from similar digestion with an acid and an alkaline solution.

Mr. BROWNEN, in replying, said he had invariably made corresponding experiments with simple acid and alkaline solutions under similar conditions, but had found the effect very much less. So in regard to salicin; a much smaller proportion was split up by a simple acid solution. He had adopted the temperature of 50° C. because he found that to be the point at which the ferments seemed to display the greatest activity without decomposing.

#### REMARKS ON THE ROOT OF ACONITUM NAPELLUS AND OTHER SPECIES.

By E. M. Holmes, F.L.S.

The author directs attention to the frequently-proved variability of strength of preparations of aconite, as proved by Mr. Cleaver concerning extract of aconite, and by the recent experiments made with the alkaloid, which have shown that one commercial sample may be 70 times stronger than another.

The Pharmacopœia, he thinks, is partially responsible for this variability. It refers to a figure of the root in the *Pharmaceutical Journal*, which is totally inadequate to distinguish the root of *A. Napellus* from that of other less poisonous species, the variation in form being very great, according to the age and position of the root. The Pharmacopœia orders it to be imported from Germany or cultivated in Britain, and collected in winter or early spring before the leaves have appeared. It is not cultivated in Britain, and there is no guarantee that the imported root has been collected at any particular time.

The chief difficulty consists in obtaining the typical variety of the right species. De Candolle describes 29 varieties of the official species, *Aconitum napellus*, but whether all these forms, which possess the same specified botanical characters in common, have the

same chemical constituents and physiological action is very difficult to ascertain.

Steudel enumerates about 80 varieties which have been grouped under *A. napellus* by different botanists. The aconites are so closely allied, and the varieties run so much into one another, like the willows, brambles, roses, mints, and cinchonas, that even De Candolle has placed the same plant under two varieties. Mr. Holmes, remembering that the Japanese peppermint plant, although botanically it offers no character to separate it from *Mentha arvensis*, is readily distinguishable by taste, supposed that the different forms of aconite might be distinguished to a certain extent in the same way. He found that the roots of several species of aconite did not cause a tingling sensation when chewed, and that this was the case not merely with the Asiatic species, *Aconitum uncinatum*, *heterophyllum*, and *palmatum*, but that also several plants which present the specific characters of *A. napellus*, although easily distinguishable from it by habit, present the same peculiarity. Forms of *A. napellus* supplied under the names of *pyramidale* and *paniculatum*, &c. did not cause tingling when chewed, while others, such as *Stoerckeanum* and *albiflorum*, produced a slight, and others again, such as *A. autumnale*, a very powerful tingling sensation. But all of the aconites in which this variation occurs, so far as he has observed, flower later than the typical *A. napellus*, so that if the Pharmacopœia added to its description "the root obtained from plants flowering in May and June," and erased the words "imported from Germany," one cause of the unequal quality of the root would be removed. The only way to secure aconite of good and uniform quality appears to be to limit the official drug to home-grown aconite flowering in May and June, and gathered when the plant is in flower. In this way there can be no mistake about the species, and the leaves collected at the same time could be used for making extract. Even if the root were thus not gathered in its most active condition, it would, at all events, have the advantage of uniformity of strength.

The aconite has the property of developing roots, instead of leaf-buds, in the axils of the lower leaves, provided that these are covered with soil. This peculiarity can be turned to account in cultivation, since by earthing up the stems a larger yield of roots could be ensured.

In testing aconite-root by taste it must be remembered that the tingling sensation is often not developed for ten minutes and lasts for two or three hours, so that half a day must be allowed to elapse before tasting a second sample, to prevent the chance of confounding the effect of one root with that of the next.

Aconite is very easy of cultivation, and, considering the small quantity used, there is no reason why any chemist who has a small piece of garden should not grow his own aconite-root.

Mr. Holmes showed samples of aconites, and at the same time showed a sample of *damiana*, which had been lately presented to the Pharmaceutical Museum by Messrs. Parke, Davis & Co.

Except a few remarks from the President, recognising the value of this communication, no discussion ensued.

#### AMMONIATED EXTRACT OF ERGOT AND A PROCESS FOR ITS PREPARATION.

By A. W. Gerrard, F.C.S.

THE author had known a preparation by the above name for ten years or more; how long before it had been in use, or to whom it owes its origin, he had no information. His earliest practical acquaintance with the extract dated some five years back, when asked by one of the obstetric assistants to University College Hospital to prepare some for him, as he had seen it used successfully in a general practice. The author could find no formula, but presumed from the name that ammonia in some form was to be the solvent of the extractive matters of the ergot, and not that the ammonia be added after an aqueous extract has been made. The solvents that appeared most worthy of trial were aromatic spirits of ammonia and solution of ammonia.

It seemed very easy to frame a process that ought to give a satisfactory result, but practice proved the contrary; the difficulty experienced was not to produce an active therapeutic agent, but to obtain a presentable pharmaceutical preparation.

Aromatic spirit of ammonia was abandoned after several experiments, as it was found almost impossible to make it pass through



the percolator. Then water to which 1 per cent. of strong solution of ammonia had been added was used. This caused an immediate deepening of colour and a rapid softening and swelling of the drug, and it was evident that the water in the presence of the ammonia rapidly penetrates the tissues of the ergot to produce a solution of its constituents. The ammonia, however, still prevented the percolation of the drug, and a solution of half the strength was next employed, which percolated satisfactorily. The following was the formula ultimately adopted:—

Take 10 parts of crushed ergot and macerate for eight or ten hours with frequent stirring in 50 parts of cold water containing  $\frac{1}{2}$  per cent. of strong solution of ammonia; then throw it upon a flannel strainer stretched over a frame, and allow it to filter. Wash the ergot from time to time as required with more ammonia water, till sufficiently exhausted. The filtrate, which is dark and somewhat turbid, is evaporated to 5 parts, any scum or fat being carefully removed. After cooling, 5 parts of aromatic spirits of ammonia are added, and the product set aside until subsidence is complete; the clear portion is then decanted and the residue filtered through felt or flannel, washing the residue with a little more spirit, so as to bring the volume of the extract to 10 parts. The product is much darker than the ordinary liquid extract, its odour is mainly that of the spirit used in its preparation, the average specific gravity is 1,000, and a sample kept for 12 months did not appear to have undergone any changes.

It might be thought curious to use ammonia as a solvent, and then to dissipate it by evaporation; but it must be remembered that the ammonia is not eliminated until its work is accomplished, and that its therapeutic action is restored by the aromatic spirit of ammonia added.

The ammonia forms a soap by combination with the oil of the ergot during maceration, and the soap remains in solution at low temperature, but is decomposed by heat.

This extract has had a thorough trial in the obstetric department of University College Hospital, and has proved a success. Dr. John Williams, one of the obstetric physicians, has requested it to be substituted for the ordinary extract in such mixtures as contain ergot. From inquiries of the author it appears that the ammonia develops a rapid action of the drug by acting as a powerful nervine stimulant, besides probably exercising a special solvent power upon the ergot principles.

The PRESIDENT complimented Mr. Gerrard on his having published his failures as well as his successes.

Mr. STUART queried whether the small quantity of ammonia used in this process did not all form a soap with the oil of the ergot. If so, would not an equally good preparation result from a simple aqueous extract? A better formula than that of the British Pharmacopœia is a desideratum, as the latter is not in favour among medical men. He had made large quantities by the acid process of the United States Pharmacopœia, which seemed to be much liked. It was somewhat curious that a good result should be obtained both from acid and alkaline menstrua.

The PRESIDENT remarked that in the new United States Pharmacopœia hydrochloric acid was substituted for the acetic acid formerly used, and the glycerine was omitted.

Dr. SYMES said water was capable of extracting ergot perfectly. In his opinion the British Pharmacopœia process was quite successful. He did not understand that Mr. Gerrard claimed that the ammoniated extract was superior. He supposed that he had seen such a preparation strongly recommended by certain houses, and had thought proper to investigate the subject. He considered the Conference was much indebted to him for so doing.

Mr. MARTINDALE confirmed Mr. Gerrard's statement that ammonia had a powerful action in extracting ergot, but he thought Mr. Gerrard's process was unnecessarily complicated. He had made an ammoniated extract without much difficulty by using equal parts of spirit and water with aromatic spirit of ammonia, in the proportion of one to eight of the mixture. This was certainly a more powerful solvent than water simply, as was also the acidulated menstruum of the United States Pharmacopœia. He did not consider the British Pharmacopœia process a satisfactory one.

Mr. PARKER pointed out that it was still not known exactly on what ergot depends for its medicinal effects. Such knowledge would be desirable before devising the best process for its extraction.

Mr. GREENISH was not prepared to accept this as a better preparation than that of the British Pharmacopœia. He quoted from Blumberg and Dragenford, who had both given considerable attention to ergot, and had concluded that water was quite sufficient to extract its medicinal properties.

Mr. HAMPSON could also confirm from direct knowledge the opinion that the British Pharmacopœia process yielded an excellent result.

Mr. MARTINDALE said water was no doubt a good solvent, but so much was required. Ammonia aided the action considerably.

Mr. PLOWMAN remarked that in the British Pharmacopœia process the oil was rejected, and it had not yet been proved that the oil was useless. So it might be that in Mr. Gerrard's process the scum which he rejected might be of some value.

Mr. SCHACHT said two medical authorities in France, whose names he did not remember, had recently published opposite opinions as to the value of the oil of ergot. He thought Mr. Parker's caution was necessary, and

he also reminded the Conference of Mr. Stoddart's investigation on ergot. He had found that its activity varied considerably according to the time of the year when it was collected.

Dr. QUINLAN said ammonia was a valuable corrective with ergot. Mr. GERRARD said he did not claim that the ammoniated extract was more active than that of the British Pharmacopœia, but from the experience gained at the University College Hospital, it would appear to improve the action of the ergot, probably by its stimulant action. He agreed that the acid preparation yielded a good result. Mr. Martindale's process was much the same as his, but he had found the addition of the aromatic spirit of ammonia make a mixture which was very difficult to work.

## TUMEFACATION AS AN AID IN THE IDENTIFICATION OF ARROWROOTS.

By W. H. Symons.

ALTHOUGH the Bermuda, Natal, and St. Vincent arrowroots are all yielded by the same plant they are of very different commercial value. It has been found that water of a certain temperature affects them differently, and various investigators have found that constant results are yielded by this test. The author now suggests the use of caustic soda solution as a tumefying agent, it being very easy of application. Solutions varying from 0.5 to 1.5 per cent. in strength were used, and the action upon some dozen starches tabulated. Of the three principal varieties of commercial arrow-root Natal was the most easily, and St. Vincent the least easily, worked upon.

Mr. GREENISH said this process was no doubt a good additional test to the microscope; but, in testing starches, no means of identification so reliable as the judgment of the relative size of the grains distinguished by the educated eye with the aid of the microscope. Mr. Greenish spoke at some length, but only a word occasionally reached the audience.

Mr. SYMONS did not profess to substitute this method of testing for microscopic examination.

## THE PURITY OF COMMERCIAL SALTS OF GOLD.

By F. W. Branson.

THE author had examined 12 samples of chloride of gold sold in 15-grain tubes. These were the products of four manufacturers. The products of A (four samples) averaged 14.957 grains in each; those of B (two samples), 15.146 grains each; those of C (two samples), 15.058 grains each; those of D (four samples), 13.749 grains each.

The gold was precipitated by oxalic acid (25 cc. of the standard solution being found sufficient for each tube). The complete precipitation in each experiment occupied 36 hours. The following averages of pure gold resulted:—A, 7.286 grains; B, 7.215 grains; C, 7.317 grains; D, 6.654 grains.

The author had not had time for the complete examination of the residues from the evaporation and incineration of the oxalic acid solution from which the gold had been precipitated. He reserves them for subsequent analysis, but states in round numbers that A and B yielded more than 10 per cent., while C and D yielded less than 1 per cent.

No metals precipitated by  $H_2S$  or  $AmHS$  were found. The samples were obtained from firms most likely to supply the requirements of pharmacists, foreign samples being purposely excluded.

The products of A, B, and C all bore trade-mark, seller's name, and guarantee label; those of D did not, but were said to be obtained from a firm possessing the confidence of the trade.

## THE IODIDES OF BISMUTH.

By F. W. Fletcher, F.C.S., and H. P. Cooper.

Mr. FLETCHER, in giving a *résumé* of this paper, remarked that there were two compounds of iodine and bismuth described in the text-books—viz., the black iodide,  $BiI_3$ , and the red oxy-iodide,  $BiOI$ . The authors of the paper had recently met with a yellow iodide, which, partly on account of its novelty, but chiefly on account of its bearing upon one of the Pharmacopœia tests for the purity of bismuth salts, they considered would be of interest to the Conference. Mr. Fletcher then described the manner in which the new compound had first come under their notice. In the course of testing a number of samples of metallic bismuth for lead, by the addition of sulphuric acid to the solution of the metal in nitric acid, they found in one instance an unusually large precipitate formed after standing for about 24 hours. On treating the deposit

with solution of ammonium acetate it dissolved, and the addition of potassium iodide threw down a yellow precipitate. A duplicate experiment being made, the authors were surprised to find that no precipitate was produced by sulphuric acid in the original solution of nitrate of bismuth, and it then occurred to them that the precipitate previously obtained was probably a very basic sulphate of bismuth. This assumption was found to be correct; and it was mentioned, by way of caution, that, if subnitrate or carbonate of bismuth, free from lead, be dissolved to saturation in nitric acid diluted with half its volume of water, as directed in the Pharmacopœia, and an equal volume of dilute sulphuric acid added, a precipitate is formed on standing which, so far as the B.P. test goes, might easily be mistaken for sulphate of lead.

The physical and chemical properties of the yellow iodide were then described, and analyses given showing that the formula of the compound might be represented as  $\text{BiI}_2\cdot 5\text{B}_2\text{O}_3$  or  $3\text{BiOI} + 4\text{B}_2\text{O}_3$ . Specimens of the new salt and of the red and black iodide were exhibited.

Dr. TRENORNE asked if the temperature at which the iodide was precipitated had any effect on its composition.

Mr. FLETCHER said temperature seemed to have no effect whatever.

#### MICROSCOPIC ORGANISMS IN SOLUTIONS OF CERTAIN INORGANIC SALTS.

By C. H. Bothamley, F.C.S., Assistant Lecturer on Chemistry at the Yorkshire College.

THE growth of algae and fungi in solutions containing organic substances is a matter of common observation, but the formation of such growths in inorganic solutions is comparatively rare. In the Yorkshire College Laboratory a green vegetable growth continually forms in solutions of sodium phosphate, magnesium sulphate, and calcium sulphate respectively, though no such growth is formed in solutions of ammonium salts, and other reagents standing on the same shelves. Experiments made in the usual way prove that the germs of these organisms are derived from the air. Under the microscope they are found to resemble *protococcus* in general structure, but are much smaller, and belong to that class of organisms grouped together under the name *crococcus*. The solutions in which this growth forms contain traces of ammonia, and the sodium phosphate contains some sulphate. The amount of phosphoric acid in the magnesium sulphate solution is not sufficient to give a reaction with ammonium molybdate. Possibly we have here further evidence that the formation of these green vegetable growths constitutes a very delicate test for phosphoric acid.

Mr. PRESTON (Saffield) mentioned the frequent occurrence of organisms in Fehling's solution.

Mr. HOLMES doubted if the presence of these organisms could be regarded as especially indicative of phosphoric acid, unless phosphoric acid were present in a great many other salts than it was believed to be found in. He mentioned sulphate of zinc and other solutions as yielding these organisms.

Mr. PARKER remarked that the conditions of the experiments alluded to would permit the absorption of ammoniacal salts from the atmosphere which would be quite sufficient to nourish fungoid growth, especially if the atmosphere were that of a pharmacy or laboratory.

Mr. GREENISH said the changes which took place in solutions of salts had not received sufficient attention. He did not think the formation of organisms was confined to any particular solution. He mentioned instances in which he had observed fungi in solutions of arsenic and of strychnine.

Dr. SYMES said the suggestion of Mr. Parker would hardly hold good, as the ammonia would pass through the cotton-wool plugs in both solutions.

Mr. PARKER said the ammonia would, but the germs would not.

Mr. EKIN mentioned that in the manufacture of certain aniline preparations he had found the solution become almost solid from the organisms which formed.

#### NOTES ON THE PHARMACY OF CINCHONA.

By R. W. Giles.

THE author states as a fact well known and maintained by nearly all authorities, that it is next to impossible to obtain officially recognised cinchona bark of the official alkaloidal standard; while there is no lack of barks of superior alkaloidal value and equally well adapted to pharmaceutical purposes which are not officially recognised.

The only dissentient is Mr. De Neufville, who asserted in a paper read at the last Conference that the supply of that calisaya during the past few years had been abundant, and the quality of quill calisaya had been good; but it did not follow that there had been an abundant supply of good calisaya bark. The author agrees with

Dr. Paul that an alteration is necessary in the range of selection of pharmaceutical barks; that South American barks should not be excluded, but that Indian barks should be admitted. In other words, let alkaloidal standard be the sole test.

It was maintained that it is owing to this deterioration of calisaya bark that cinchona has been so largely displaced by quinine, notwithstanding the opinion of the best authorities upon the relative value of the two medicines.

English and foreign observers have declared that the febrifuge and antiperiodic action of cinchona is common to all its alkaloids, while the best writers upon therapeutics assert that cinchona possesses medicinal properties superior to those of any or all of its alkaloids.

In these days of practical science brokers sell and quinine makers buy cinchona bark on the basis of its alkaloidal percentage, ascertained by exact analysis. The pharmacist alone buys haphazard the "showy barks," often very poor in alkaloids, and hence known as "druggists' barks," which the quinine-makers are only too happy to leave for him.

The very reverse ought to prevail. The pharmacist should secure the first choice by being willing to give a better price than the quinine-makers, who can only give the alkaloidal value. The author had heard of a time-honoured establishment buying several serons of calisaya bark at 3s. 6d. per lb., which proved to contain not a particle of quinine, and only a very small amount of cinchonine. Its assay value certainly would not have exceeded 6d. This is a sort of bark which should be left for the stores, whom it would exactly suit, and where no questions are asked.

The author advocates, therefore, that an alkaloidal, not a quinine, standard should be adopted for barks, and that cinchona from any source should be admitted. He suggested that a 5 per cent. standard should be adopted as a fair average.

The process for assaying the bark recommended by Mr. Giles was based on the recommendation of Dr. de Vry, as follows:—

To 25 grains finely powdered cinchona bark, add 2.5 c.c. strong hydrochloric acid in 30 c.c. distilled water, or sufficient to moisten the bark, set by for two hours, add 100 c.c. distilled water, and let stand for 12 hours or more, stirring occasionally, until all foam disappears from the surface. Pour into cylindrical glass percolator, the mouth of which has been stopped by a pinch of charpie loosely dropped into it and moistened with a little water, and recover the clear percolate. Pour on more water until the percolate ceases to be precipitated by caustic soda. The percolate will measure 200 c.c. to 300 c.c. Precipitate with caustic soda in considerable excess. After 12 hours the alkaloids have settled in a compact stratum, from which nearly the whole of the supernatant may be decanted. The precipitate, carefully dried and weighed, should not be less than 1.25 grains to represent 5 per cent. The quantity of alkaloid remaining in the mother liquor may be estimated as 0.65 grammes in 100 c.c.

Concerning the cinchona preparations, the author says it is notorious that they do not meet the demands of modern medical practice. Cinchona won its reputation by administration in the form of powder; it has lost it by the substitution of inferior preparations of inferior bark. The tincture, decoction, and infusion of former generations have had their day and are becoming obsolete, never again to find favour with prescribers, pharmacists, or patients. They are all too feeble in alkaloids for administration when the specific effects of cinchona are in question.

Fluid extracts are the pharmaceutical preparations of the day; but a fluid extract of cinchona, worthy of its name, is still a desideratum in pharmacy.

The PRESIDENT said he feared the present occasion was not suitable for discussing to what principles cinchona owes its properties, but there were several important pharmaceutical matters suggested in this paper which the Conference was quite competent to discuss.

Mr. WELLCOME said it was very desirable that barks of definite alkaloidal strength should be supplied to chemists, and he believed that to some extent this was done. He understood that Messrs. Howards supplied bark so guaranteed. He had last year strongly urged that a definite alkaloidal strength of bark should be adopted, and he thought it desirable that this standard should calculate not the quinine only, but the total alkaloids. He mentioned especially cinchonine, which is considered by many to be simply microcrystalline quinine, as one of the other valuable alkaloids of cinchona, and as being in extensive use in the tropics.

Mr. SOUTHALL confirmed Mr. Giles's remarks on the barks. He stated that in his district there was still a great run on the decoction.

Mr. HAMPTON took the opportunity of advocating that pharmacist should occupy their proper position in regard to the Pharmacopœia,



Mr. EKIN, referring to Mr. Southall's remarks, said he was afraid the medical men of Birmingham had made an unhappy selection in preferring the decoction to the other preparations of bark. His experiments a few years ago had shown the decoction to be relatively the weakest of all the preparations in alkaloids.

Dr. SYMES said the decoction was also the most popular preparation of bark in his district.

The PRESIDENT said there was evidently a necessity for therapeutic as well as pharmaceutical research.

Mr. GILES, in replying, said it seemed as if medical men had pinned their faith too much to the alkaloid first discovered. He thought it would be well if they admitted the others to some share of co-operation in medicinal effect.

#### NOTE UPON THE ACTION OF GLYCERINE ON SOME SALTS OF IRON.

By G. P. Schacht.

MR. SIENSTONE had given to the author the remains of a mixture that had been dispensed for him from the following prescription:—

Tr. ferri perchlor.	..	..	..	..	3iss.
Glycerini	..	..	..	..	3vj.
Aque	..	..	..	..	ad 3vj.

M.

The mixture when first prepared was of a pale sherry colour, and possessed an astringent metallic taste. When received by Mr. Schacht the colour had almost disappeared, and the taste was sweet and metallic, but not astringent.

The application of ferrieyanide of potassium and of sulphocyanide of potassium showed that the iron had been reduced from the ferric to the ferrous condition to a very considerable extent, but not to the complete reduction of the perchloride.

On preparing the mixture it was found that the *tincture* of perchloride of iron taken from the ordinary dispensing-bottle was no longer what it was when originally mixed, for it gave an emphatic bright green colour with ferrieyanide of potassium. This showed that a change in the condition of the iron in the *tincture made with ordinary alcohol* had commenced to take place, similar to that suspected to have been developed under the influence of glycerine.

It was found that the iron in the mixture was slowly reduced if kept under ordinary conditions, but rapidly if exposed to direct sunlight. Under similar circumstances alcohol reduced the iron the same as glycerine. By another experiment the author proved that glycerine had some effect in preventing the oxidation of a ferrous salt in a mixture.

#### NOTE ON A REACTION OF GLYCERINE AND OTHER POLYHYDRIC ALCOHOLS.

By Wyndham R. Dunstan, F.C.S.,

KLEIN first noticed that when certain polyhydric alcohols are added to a solution of borax an acid reaction results. Senier and Lowe have studied this reaction specially as it affects glycerine, and proposed a test for glycerine based upon the reaction. Donath and Mayrhofer have observed that if the acid solution obtained by the addition of glycerine to an aqueous solution of sodium baborate be heated the liquid becomes alkaline. They considered this reaction characteristic of glycerine, and propose it as a test for this substance, using litmus as an indicator of the reaction. The author now records some experiments which indicate the delicacy of the reaction and also its invalidity when considered as specially characteristic of glycerine.

In those experiments it was found desirable to substitute phenolphthalein for litmus as a much more delicate indicator. When an alcoholic solution of the former substance, which is faintly yellow, is added to a solution of borax a rose-red colour is produced owing to the alkalinity of this salt. Upon the addition of glycerine to this solution the red colour at once disappears, the solution being acid and colourless. Upon heating the liquid the rose-red colour is again developed, reaching the maximum tint near the boiling-point of the solution. As the liquid cools the colour gradually fades away, until finally the solution is again colourless. The colour-changes are sharp and well defined. Experiments have been made with solutions of borax of various strengths; the best results were obtained with  $\frac{1}{2}$  per cent. solution of borax. The test is, however, not satisfactory with solutions of glycerine of greater dilution than 2 per cent., as the changes of colour become indefinite, owing to

the action of the water. Neither can a more dilute solution of borax than a  $\frac{1}{2}$  per cent. solution be used for the same reason. The reaction, too, is far from characteristic of glycerine, but is more so of the polyhydric alcohols in general. The same reaction is given by mannite, erythrite, dextrose, levulose, lactose, and mycose. Sucrose (cane sugar) does not behave in the same way. In the case of mannite the reaction is extremely delicate, more so than with glycerin, and the solution is not so amenable to the influence of water as is the solution of the latter substance.

#### THE SOLUBILITY OF BORIC ACID IN GLYCERINE.

By David Hooper.

PROFESSOR BARFF's "Boro-glyceride," and still later the glyceroborate of calcium and the glyceroborate of sodium, described by M. Le Bon in the *Comptes Rendus*, xcv., 145, have created a demand for these antiseptics. Mr. Hooper's experiments were directed to the elucidation of the solubility of the one substance in the other at various temperatures. Especial care was taken to ensure absolute purity of the two substances. The result of a number of determinations showed a regular progression of solubility as the temperature was increased. Thus at 0° C. 10 of glycerine dissolve 20 of boric acid; at 25°, 30 parts; at 50°, 43 parts; at 75°, 58 parts; and at 100°, 72 parts.

The foregoing three papers were read in succession, with the intention of taking the discussion on them all.

The PRESIDENT said Mr. Schacht's "note," as he preferred to call it, was a model note, and was very valuable, as it recorded the result of observations on a difficulty which might occur to any dispenser. Of course it had long been known that perchloride of iron was reduced to a ferrous condition by alcohol, and, indeed, in the old North German Pharmacopoeia there was a formula based on that fact. Apparently the reduction was effected even more rapidly by means of glycerine—an observation which seemed to confirm Mr. Dunstan's theory. Mr. Hooper's paper seemed to have reference to the recently-introduced antiseptics, and he (the President) considered that not only the preparation and sale of such chemicals, but also advice as to the proper employment of antiseptics, was a very appropriate duty for pharmacists.

Mr. JACKSON asked if he had understood from Mr. Schacht that glucose was formed in the course of the reactions he had described.

Mr. KINGZEIT remarked that it was as well to bear in mind that no evidence had yet been adduced to prove that boro-glyceride had any effect other than was due to boric acid and glycerine separately, and that it must be separated into these two bodies when it was employed.

Mr. GERRARD said Mr. Schacht's paper explained to him a fact he had noticed and had not before understood. At University College Hospital they were accustomed to keep a mixture ready made containing tincture of perchloride of iron and glycerine. This was kept in a concentrated form, and he had always found that it became much paler as it was kept than it was when first made.

Mr. SCHACHT, in reply to Mr. Jackson, said he had not been able to fully trace out the changes which occurred, as he had hoped to have done when he offered to bring this matter before the Conference.

#### METHYL ORANGE AS AN INDICATOR OF FREE ACID.

By Barnard S. Proctor.

IN this communication Mr. Proctor gives the results of trials with several salts in common use in pharmacy, such as alum, proto-sulphate of iron, &c., showing that the pure salt does not redden methyl orange (sulpho-benzene-azo-dimethylamine), but that a small trace of really free acid along with these salts gives an immediate reaction.

One grain of the dye in a pound of water makes an orange-yellow test liquor, two or three drops of which added to 1 oz. of water give it a yellow tint, which is changed to pink by a very small trace of free mineral acid.

It is not so sensitive to oxalic acid, still less so to acetic, and not at all affected by carbonic.

#### NOTE ON A COMMERCIAL SAMPLE OF LIQUOR OF IODIDE OF IRON.

By B. S. Proctor.

MR. PROCTOR alluded to the chronic desire among pharmacists to circumvent the nature of iodide of iron; to him, however, it does not appear probable that the same material should possess different properties when made by different processes; and if it were possible to obtain the same material endowed with different properties by

deviating from the B.P. process, he should say that deviation ceased to be legitimate.

He then narrated his experience of some "Liq. Fer. Iodidi," which he was assured by the makers was not prone to darken, and could be made into a syrup of full Pharmacopœia strength by mixing with simple syrup as wanted, and in which he would find nothing but the legitimate iodide of iron and water.

He noted that the liquor was freely acid, and reddened methyl orange, which is not acted upon by pure iodide of iron.

His experiments suggested the presence of sulphurous acid, phosphoric acid, and oxalic acid. He also found the liquor to be deficient in strength.

He recommended that if pharmacists feel at liberty to add any preservative to the solution, they should do it themselves, and know what is the nature of the addition, rather than accept impure preparations not knowing the nature of the impurity.

The PRESIDENT said so much had been said and written about solutions of iodide of iron, and the subject had such a general interest, that he need not say a word to stimulate discussion. In reference to the other paper of Mr. Proctor's, the President alluded to the advantages of methyl orange as an indicator, and said chemists had become so accustomed to use litmus that they had come to regard it essential. The indications as afforded by methyl orange were, however, much more definite and delicate.

Mr. MARTINDALE and Mr. EKIN also referred to the advantages of methyl orange.

Mr. FLETCHER said that the President had justly intimated that no meeting of the Conference could be considered complete without some reference to iodide of iron. It was continually turning up, like Charles the First's head in Dickens's novel. When he saw the title of Mr. Proctor's paper announced he had turned to the literature of the subject, and had counted 42 papers upon it in the *Pharmaceutical Journal*. The introduction of iodide of iron into medical practice was due to Dr. Thomson in 1834, and, curiously, his original formula was for a liquor ferri iodidi. In 1836 Mr. Squire suggested the use of a coil of iron wire to keep the solution. Dr. Thomson read a paper at an evening meeting of the Pharmaceutical Society in 1842, in which he seemed to throw cold water on this suggestion. He narrated how a lady for whom he had prescribed this solution had written to him to ask if she should take the wire all at once or in portions. In that paper Dr. Thomson had suggested the formula for the syrup, which had been retained to the present time. He (Mr. Fletcher) had noticed that whenever this subject was mentioned some gentleman was sure to get up and say that he never found any difficulty in keeping the syrup, but the numerous papers on the subject proved that there was still room for improvement. He felt some difficulty in criticising this paper—first, because Mr. Proctor was a much more experienced pharmacist than himself; and, secondly, because, as a manufacturer of iodide of iron, his motive might be misinterpreted. No fact was more conclusively proved than that when iodine and iron were brought into contact in the presence of water hydriodic acid was developed. This had been proved to demonstration, and it was the presence of this hydriodic acid which caused the coloration. Mr. Proctor first observes that the liquor had an acid reaction. He challenged Mr. Proctor or any one else to produce a solution of iodide of iron which should not have an acid reaction. Then he discovers oxalate of iron in the liquor, and infers that oxalic acid had been added to preserve the solution. The manufacturing chemists had had a rather bad time of it at this Conference, but, bad as they might be, they would hardly have the hardihood to introduce such a substance into a solution intended for medicinal use. Then Mr. Proctor finds sulphurous acid, an addition which would certainly have the effect of turning the solution thick and muddy. Mr. Proctor also seems to have found phosphoric acid. A suggestion to employ this as a preservative emanated from an ex-President of the Conference, Mr. Groves, and at Swansea the same gentleman had shown that by treating coloured syrup with a little liquor potasse and phosphoric acid it could be restored. He added that if the choice lay between two evils he preferred to choose the lesser. He regretted Mr. Proctor was not present to answer questions which the paper suggested. He noticed that Mr. Proctor made no mention of the specific gravity of the solution, itself a good indication of the strength. Mr. Proctor seems to object to add anything even to improve a faulty preparation. And yet in a former paper Mr. Proctor himself had urged that some addition should be made to hydrocyanic acid to keep it, and Mr. Williams had recommended the addition of glycerine. It was a question for pharmacists whether they should send out syrups of all sorts of colours, or one, which, the hydriodic acid being eliminated, would better please their customers.

Mr. WILLIAMS explained that his recommendation was not that pharmacists should make any addition without authority, but that they should have authority to make such addition.

Dr. SYMES, while admitting the convenience of the concentrated liquors, observed that Mr. Fletcher rather sat upon those, himself amongst them, who maintained that syrup of iodide of iron, prepared by the British Pharmacopœia process, would keep perfectly well. He found that by keeping the syrup exposed to light it would not colour. He did not see why a coil of iron wire was more justifiable than any other addition.

Mr. PARKER confirmed Dr. Symes. He had some syrup in his possession which he had kept for two years. The only precaution necessary was that it be kept in small bottles, from which the air was entirely excluded. In dispensing small quantities of the syrup, one drachm, for instance, the liquors were rather inconvenient than otherwise if one had to measure the eighth. They were useful to those unable to prepare the syrup.

Dr. TICHBORNE did not think iron wire was of any use in preserving the syrup. Many years ago, in a paper he had read at Bloomsbury Square, he had stated that the proportion of sugar was not large enough, and had recommended that the solution should be filtered into a hot saturated syrup. All were aware that hydriodic acid is formed in the preparation of the solution of iodide of iron, but it might be reduced to a minimum by prolonged boiling.

## SOLUBILITY OF MORPHIA SALTS.

By D. B. Dott, F.R.S.E.

SOME observations by the author on the solubility of some of the salts of morphia were published in the *Pharmaceutical Journal* of January 29, 1881. Two communications on the same subject have since appeared, both from American sources. The first is a paper by Professor Frederick Power on "The Solubility of Sulphate of Morphia," and the second is by Mr. J. U. Lloyd on "The Solubility of the Official Morphia Salts in Water and Alcohol."

Mr. Dott considers both papers very much open to criticism. Dr. Power determined the solubility of sulphate of morphia by two methods, which ought to have yielded identical results, but which present a difference of about 2.5 per cent.—a somewhat serious discrepancy. Dr. Power concludes that "1 part of sulphate of morphia requires in round numbers 24 parts of water at 15° C. (59° Fahr.) for solution." This result, however, is arrived at by dividing the *weight of the solution* by the weight of the salt dissolved therein. Mr. Dott thinks he should have divided the *weight of the solvent* by the weight of the salt.

Turning to Mr. Lloyd's paper, the following points are criticised:—Referring to the residue remaining from an alcoholic solution, Mr. Lloyd remarks:—"The alcohol may abstract more or less water of crystallisation, and fail to take its place in like amount, if at all, thus leading us into a slight error." Mr. Dott is not aware of a single instance of alcohol combining with an alkaloidal salt, and all the well-known morphia salts separate from 85 per cent. alcohol with the same proportion of water of crystallisation as when crystallised from water. He regards Mr. Lloyd's system of boiling a known weight of water in a retort and gradually introducing the salt through the tubulure as an elaborately erroneous method of ascertaining the solubility of the salt in the boiling menstruum. Mr. Lloyd is also said to be very far wrong in his estimate of the solubility of the acetate as 1 part to 11.7 parts of water. Mr. Dott says it is not far removed from 1 in 2.

The PRESIDENT spoke of the indefiniteness of the subject of solubility generally. He was not quite sure that Dr. Power was not justified in disregarding the addition made to the solution by the bulk of the salt dissolved. But the matter was not so definite as it might be. Different meanings, for instance, were attached to the expression 1 in 10. Mr. Parker had paid some attention to solubilities.

Mr. PARKER agreed that the subject of solubilities was somewhat hazy. Solubilities ought to be taken under standard conditions applicable to all countries. But those conditions must vary with different substances. The solubility of bodies of definite chemical constitution not affected by heat might be taken by evaporation; but other bodies could not be so estimated. Two methods of taking solubilities were practised—one by dissolving the salt in the menstruum, and observing the point of saturation; and the other by using an excess of menstruum, evaporating, and observing the point of crystallisation. These methods gave different results. For instance, he had found the solubility of terpin hydrate as taken by one method to be 1 in 13, by the other 1 in 11. This was a considerable difference. A standard system applicable to bodies generally, with some few exceptions named, would be very valuable.

Mr. WILLIAMS said this question of solubility had perhaps a wider bearing. He believed it was intimately connected with the power a body possessed of crystallisation. He referred to a recent paper by M. Tanret on caffeine, in which he had shown that though caffeine was itself very insoluble, yet when in combination with benzoate or salicylate of soda it became very soluble. This would upset the standard. Salicylic acid also rendered other alkaloids more soluble. He believed that to a great extent the solubility of a salt was a measure of its power of crystallisation. The greater solubility of some salts in solutions of sugar was also instanced.

Mr. SHENSTONE remarked that old investigators were in the habit of stating solubilities by saying that so much was soluble in 100 parts of water. This was not liable to mislead. When caffeine and salicylate of sodium were dissolved together you get a compound salt, the solubility of which would be materially different from that of the alkaloid.

Mr. SQUIRE said the question of solubility depended rather on the object in view. Some inquirers would desire to know how much salt would dissolve in a given quantity of water, while others might want to know the point at which a salt would crystallise.

## REPORT ON THE STRENGTH OF COMMERCIAL SAMPLES OF TINCTURE AND LIQUID EXTRACT OF OPIUM.

By John Woodland, F.L.S., F.C.S., &c.

MR. WOODLAND considers that opium used for preparation ought to have an official standard of say 8 or 10 per cent. (one or the other) of morphia, proper allowance to be made if an opium of higher than the standard strength be used. He does not think it would be necessary to consider the other principles contained in opium.

Fourteen samples of tinct. opii had been obtained from London and provincial chemists. If in all cases opium with 8 per



cent. of morphia had been employed, the percentage yielded by the tincture would be about '6. The following were the percentages actually found:—'62, '41, '45, '38, '61, '59, '68, '32, '45, '70, '51, '41, '65, '69.

Ten samples of liquid extract of opium were treated in a similar manner to those of the tincture, viz., evaporation to dryness, and the subsequent estimation of morphia in the residue. The percentage of morphia should have been '38 if an 8 per cent. opium had been used. The following were the actual results:—'37, '21, '30, '36, '19, '23, '37, '31, '21, '22.

The PRESIDENT said this paper opened the question of supplying drugs of standard strength. It was curious that the extract should average so much below the tincture in morphia strength.

Mr. PLOWMAN had not calculated the results, but he thought Mr. Woodland had estimated the morphia in the liquid extract on an incorrect basis. The details of Mr. Plowman's criticism were inaudible off the platform.

#### REPORT ON THE PURITY OF COMMERCIAL SAMPLES OF SILVER SALTS.

*By John Woodland, F.L.S., F.C.S., &c.*

THE author had examined four samples of caustic points, and had found them to contain 63, 71, 64, and 75 per cent. of silver nitrate respectively. The diluent in three cases was potassium nitrate, and in the fourth sodium nitrate. He had also examined six samples of crystals of nitrate of silver. Two of these he found pure, the others contained respectively 8, 10, 14, and 19 per cent. of potassium or sodium nitrate. Crystals of nitrate of silver, when pure, are transparent, and an impurity can usually be told by its giving a translucent appearance, and so causing them to somewhat resemble the crystals of chlorate of potash. Mr. Woodland had also estimated 6 samples of oxide of silver. One of these contained 25 per cent. of siliceous matter; the rest were found to contain respectively 13, 17, 19, 24, and 24 per cent. of impurity, described as carbonate and chloride of silver. Their presence with the oxide seems to indicate that either solution of potash or soda is used in its preparation, instead of lime water as officially ordered.

THE PRESIDENT said he believed it was generally known that caustic points were not pure nitrate of silver. In that form they would be too brittle, and it was understood that they were toughened by the addition of a diluent. The crystals, of course, should be pure.

Dr. QUINLAN agreed that some addition to nitrate of silver to toughen it was quite necessary.

Mr. MASON said he did not notice if Mr. Woodland had stated the source of the nitrate of silver crystals which he had tested. He thought such crystals were not likely to come into the hands of chemists and druggists. It might have been some photographic waste which had been bought up. He believed the oxide of silver was not to be bought chemically pure. He had wanted some recently and had written to the manufacturers, who said they would have to make it specially, and he actually received it in a moist condition.

Mr. WILLIAMS said it was quite well understood that caustic points were not pure nitrate of silver. He believed nitrate of lead was the diluent generally employed. It was found to give greater toughness than nitrate of potassium. This was not an adulteration; it was quite understood, and was allowed for in the price. He was astonished at the statements in regard to the crystals. He had had many years' experience with this salt, and had never found any but mere traces of impurity. Photographers would certainly not purchase such impure salts twice. They knew quite well what nitrate of silver would do.

Mr. ANDREWS said the impurities mentioned in oxide of silver were important, as the substance was considerably used in dispensing.

Mr. WILLIAMS said it was almost impossible to get this quite free from traces of chloride.

Mr. GROVES said there was often carbonate present also, as evidenced by the fact that pills containing the salt were liable to swell.

The thanks of the Conference were voted to each author as his paper was read, on the motion of the President.

The next business was the selection of the place of meeting for 1883. The President explained that the British Association had been informed that it would not be convenient for them to visit Oxford next year, and it was not yet decided whether they would go; and, as the Conference had generally followed the Association, the Executive Committee were not at present prepared to recommend a place of meeting. If the Conference had confidence in their Committee, would they leave the selection of a place of meeting to that Committee?

This suggestion was agreed to.

The following were then elected officers for 1882-3, four blanks being left for local names:—

PRESIDENT.	OTHER MEMBERS OF EXECUTIVE COMMITTEE.
Professor Attfeld, Ph.D., F.R.S., F.I.C., F.C.S.	Alexander Kinnimont, F.C.S., Glasgow.
VICE-PRESIDENTS.	J. C. C. Payne, Belfast.
M. Carteighe, F.I.C., F.C.S., London.	W. A. H. Naylor, F.C.S., London.
J. R. Young, Edinburgh.	R. Chipperfield, Southampton.
C. Umney, F.I.C., F.C.S.	P. W. Squire, F.I.S., F.C.S., London.
TREASURER.	G. S. Taylor, F.C.S., London.
C. Ekin, F.C.S., Hounslow.	J. C. Thresh, D.Sc., F.C.S., Buxton.
GENERAL SECRETARIES.	F. W. Fletcher, F.C.S., London.
F. Baden Benger, F.C.S., Manchester.	LOCAL SECRETARY.
S. Plowman, F.I.C., London.	

#### AUDITORS.

James Spearing, Southampton.

Votes of thanks to the local committee, especially to Messrs. Randall, Chipperfield, and Dawson, to General Cooke, Director-General of the Ordnance Survey Office, and to the President, were then passed and acknowledged, and the Conference of 1882 was concluded.

The attendance was somewhat smaller than has been the case in recent years. The signatures in the Conference-book numbered 118. The following list shows the attendance since the formation of the Conference:—

1863 Newcastle-on-Tyne .. .. 24	1873 Braiford .. .. 104
1864 Bath .. .. 69	1874 London .. .. 175
1865 Birmingham .. .. 73	1875 Bristol .. .. 118
1866 Nottingham .. .. 84	1876 Glasgow .. .. 176
1867 Dundee .. .. 67	1877 Plymouth .. .. 137
1868 Norwich .. .. 74	1878 Dublin .. .. 147
1869 Exeter .. .. 69	1879 Sheffield .. .. 146
1870 Liverpool .. .. 170	1880 Swansea .. .. 79
1871 Edinburgh .. .. 116	1881 York .. .. 163
1872 Brighton .. .. 137	

The following is a list of those present at the Southampton meeting:—

Akers, P. (London), Allechin, A. (London), Allen, W. N. (Dublin), Andrews, F. (London), Atkins, S. R. (Salisbury), Atkins, W. R. (Salisbury) Attfeld, J. (London).

Badcock, H. (Lymington), Baker, J. (Romsey), Baker, T. B. (Cosham), Barron, W. T. (Chelms, Lanc.), Bates, W. (Southampton), Benger, F. B. (Manchester), Bennett, H. (Kingstown), Berry, W. (Bristol), Bienveau, J. (Southampton), Bishop, S. (Southampton), Borland, J. (Kilmarnock), Brauson, F. W. (Leeds), Bray, J. H. (Southampton), Brown, G. (Sandown, I.W.), Brown, G. (Ringwood), Burden, G. M. (Luton).

Cardwell, E. (Reading), Chipperfield, E. (Southampton), Chipperfield, R. (Southampton), Clark, J. (York), Clark, J. W. (Leicester), Clark, W. A. (Southampton), Cocksedge, H. B. (London), Cottrill, G. J. (Shepton Mallet), Croydon, E. H. (Newcastle, Staffordshire).

Dalgarno, P. (Southampton), Davenport, H. (London), Dawson, O. R. (Southampton), Deane, James (London), Dresser, R. (York), Dunn, G. S. (Fareham).

Ekins, C. (London).

Farnworth, W. (Blackburn), Fletcher, F. W. (London), Fletcher, I. B. (Totton), Presson, J. F. (Stevenage).

Gerrard, A. W. (London), Glibb, W. D. (Manchester), Gilbert, W. J. (Lancaster), Giles, R. W. (London), Grose, N. M. (Swansea), Greenish, T. (London), Groves, T. B. (Weymouth).

Hampson, R. (London), Haydon, F. W. (Fordingbridge), Hills, W. (London), Holmes, E. M. (London), Hughes, J. (Swansea).

Jackson, A. H. (Manchester), Johns, J. J. (Southampton), Jones, M. (Swansea).

Kingzett, C. T. (Tottenham).

Lescher, F. H. (London), Lewinton, A. B. (Luton), Ligas, H. B. (Freetown), Lister, T. (Barnsley).

Maggis, T. (Yeovil), Martindale, W. (London), Mason, A. H. (Liverpool), Mathew, J. H. (London), Meadows, M. (Gloucester), Mumford, A. (Southampton).

Naylor, W. A. H. (London).

Padwick, J. (Brighton), Padwick, T. (Redhill), Parker, R. H. (London), Pasmore, F. (London), Patchett, C. E. (Nottingham), Paul, B. H. (London), Payne, J. C. C. (Belfast), Phillips, J. (Wigan), Plowman, S. (London).

Pollard, H. H. (Ryde, I.W.), Preston, J. (Sheffield), Prince, P. (London).

Quinlan, F. J. B., M.D. (Dublin).

Randall, W. B. (Southampton), Reel, W. (Landport), Redwood, T. (London), Richmond, R. (Leighton Buzzard), Robinson, R. A. (London).

Saunders, T. P. (West Cowes), Savage, W. D. (Brighton), Savory, A. L. (London), Schacht, G. F. (Clifton), Shennstone, W. A. (Clifton), Shipman, J. J. (Bournemouth), Sillito, F. S. (Redhill), Smeeth, E. S. (Shirley), Southall, W. (Birmingham), Spearing, J. (Southampton), Spinney, F.

(Bournemouth), Squire, P. W. (London), Stafford, W. (Gloucester), Stephenson, J. B. (Edinburgh), Stuart, C. E. (Newcastle-on-Tyne), Symes, C. (Liverpool), Symons, W. H. (London).

Taylor, E. (Droitwich), Tichborne, Professor (Dublin).

Ward, G. (Leeds), Wellcome, H. S. (London), Wetzel, H. A. (Detroit, U.S.A.), White, W. C. (Southsea), Whitrow, B. (Tunbridge Wells), Williams, J. (London), Wootton, A. C. (London), Worth, E. (Bournemouth), Wrenn, W. A. (London), Wright, A. H. (London), Wright, T. R. (London).

### THE ENTERTAINMENTS.

The reception and entertainment of the British Pharmaceutical Conference is a burden on the chemists of the unfortunate town which happens to get hit with the honour of a visit, not the less real because it has always hitherto been borne so cheerfully. In the first place a local Committee has to be organised, and the work planned out nearly a year before the meeting. Then lodgings, rooms for meetings, and all details of the troublesome business of providing a big picnic have to be arranged. Only those who have actually engaged in such work know how much has to be done. And besides the trouble a considerable sum of money has to be collected, much of which is given by gentlemen who never share an atom of the glory, and who care nothing whatever for the Conference or its objects.

We mentioned last month the system adopted this year for the first time by the American Pharmaceutical Association in regard to entertainments. The Association have appointed a Committee; the Committee have arranged a programme; a little friendly co-operation on the part of the local pharmacists is all that is asked; and every member who wishes to share in these entertainments has to pay a price which will cover the expense, which amounts there, it appears, to about 1*l.* per head. A system somewhat similar is adopted by the German *Apotheker Verein*, and most certainly will be followed some day in this country if the Conference should live. We should be glad to learn that the pharmacists of Southampton were the last victims of the present most unsatisfactory method.

These remarks express the views of many of the frequent visitors to the Conferences. Having made them, we pass on to record the generous exertions of the chemists of Southampton and the neighbourhood to promote the enjoyment of those who attended the Conference of 1882.

A pleasant and substantial luncheon was provided each day between the sessions in rooms adjoining the Wat's Memorial Hall. Several parties of the members were conducted through the interesting establishment of the Ordnance Survey Works, where full opportunity was given for the examination of the artistic, photographic, and zincographic processes by which the maps used by the Government Department are produced. On the evening of the first day of the Conference a trip was provided to Netley Abbey, *via* the floating-bridge and carriages. About 70 or 80 took advantage of the opportunity, but, unfortunately, their communings with the Spirit of the Past were sadly damped by steady rain, and they came home convinced of Sir Walter Scott's practical wisdom in recommending a moonlit evening for the contemplation of a roofless ruin. Perhaps he, too, had been out to "fair Melrose" on a wet night.

Heavy rain came on again the next evening, and a stiff gale stirred the Channel all night. It was possibly the groans of Boreas in the night which occasioned several conspicuous absences when the party met on Southampton Pier at half-past eight on the Thursday morning. More than a hundred bold spirits, however, mounted the bridge of the *Princess Beatrice* for the hour and a half trip to Ryde Pier. The storm of the previous night had left a fair swell on the water, and the sniff of the briny was richly laden with nascent iodine. The Isle of Wight put on its gayest appearance for that one day, and though rain prevailed nearly all over the adjacent islands of Great Britain and Ireland, and during the adjoining days, that particular point of space and time was a sort of oasis in the desert, or, as it might perhaps be more accurately symbolised, a desert in the oasis of surrounding tempests.

A short ride by rail brought the party to Brading, where a considerable interval was allowed in order to admit of a visit to the very interesting Roman villa recently discovered in the neighbourhood. After this had been fully examined, the excursionists again joined the train at either Brading

or Sandown station, which were about equidistant, and were then borne to Ventnor. Luncheon *à la* help-yourself was provided for the party in a beautiful garden, which had been kindly lent by the owner, Captain Roche, and the fortified pharmacists then set off, a few to explore Ventnor and Bonchurch, but the majority to ramble through the beautifully-wooded Landslip to Shanklin. Near here Mr. Gibbs, of Ryde, has a charming residence, where he and Mrs. Gibbs very kindly received and entertained a large section of the party. After a stroll through the famous Shanklin Chine a smart shower intervened, and somewhat interfered with the dignity of the march to the station. A pleasant return journey landed the travellers at Southampton Pier soon after 7 P.M., where they found still further hospitality awaiting them.

High tea was ready at the Royal George Hotel at 7.30, but the usual washing squabbles delayed the commencement till 8. The hosts seemed a little disappointed that their party was not larger, though a small contingent of those who had not braved the perils of the day came in soon after operations had begun. Mr. Randall presided, and vigorous appetites proclaimed the virtues of the Solent air. The Royal George, however, was more than equal to the occasion, and after a sharp contest for over an hour the attacking party laid down their arms. Professor Attfield announced that there was no programme of toasts, but it was impossible for the visitors not to recognise and express their cordial thanks to the local pharmacists for all that they had done to promote the pleasure of their guests. Short speeches followed from Messrs. Randall, Chipperfield, and Dawson. Then Dr. Quinlan struck in with a toast to the ladies, for whom Mr. Pownman responded. At this point Mr. Randall retired, and Professor Attfield took the helm, and announced that he had secured promises of several songs and recitations. Having first set the room in tune himself, Miss Trevelyan followed, and Mrs. Wright gave a couple of recitations in splendid style. Songs from Dr. Quinlan, Mr. A. H. Mason, and Mr. Hughes, of Swansea, succeeded, while Mr. Wellcome gave a recitation in the American language. Then the revels were wound up by Mr. Chipperfield, who delighted the company with a couple of humorous pieces rendered in the most perfect fashion. And then the hotel yawned and folks went home to bed.

### OPINIONS OF THE PRESS.

The *Times*, in a leading article, thus comments on Professor Attfield's address to the British Pharmaceutical Conference:—The Pharmaceutical Conference is a gathering of men whose doings and discussions should have no little interest for the general community. The dispensing chemist is not exactly a State functionary, but he is an important public servant. In the modern division of professional labour he is the necessary intermediary between the doctor and his patient. The doctor prescribes, the chemist compounds, the patient swallows. Armed with a slip of paper, often not too legibly written and never intelligible to non-professional readers, the patient quits the physician's consulting-room and goes to the chemist's shop. He is compelled to trust the latter to give him what the doctor has ordered. Doctor and patient, in fact, are entirely in the chemist's hands. The patient does not even know what it is that the doctor has ordered, the doctor cannot tell that his orders are carried out. Even if the prescription is duly dispensed according to order, there is still not a little to be taken on trust. The drugs may be old or weak, or they may be of inferior quality. The case supposed, moreover, represents the minimum amount of trust ordinarily reposed by the public at large in the dispensing chemist. There must be times and occasions when the dispenser is ignorant, inadvertent, or shifting; when he either makes a sheer mistake, or is tempted to substitute one drug for another with which he happens to be unprovided. There are others when he is induced or even forced by the importunity of his customers to prescribe as well as dispense. There is still, in fact, a good deal of old world simplicity, not to say superstition, in the popular resort to medical advice. Many good people in country places think nothing of a doctor who does not dose them well, and they discern no material difference in skill between the doctor himself and the chemist who gives them



a draught and the old woman who mixes them a dose of simples.

On the whole, we are rather disposed to think, in spite of Professor Attfield, that the law does all that it can or need do at present; the rest may fairly be left to the corporate efforts and feeling of the members of the pharmaceutical calling and to the common sense of the public at large.

It is highly desirable, of course, that pharmaceutical chemists should be men of high character and good education, and such we understand to be the aim of the Pharmaceutical Conference. But the business of a dispensing chemist is in one sense a trade like any other, and as such it is subject, like any other trade, to the stimulating influence of competition and to the natural conditions of supply and demand. Professor Attfield desires that the chemist and pharmacist should be in reality as well as in name a druggist also—that he should be skilled in the preparation of drugs from the raw material as well as in the compounding of them. This is, no doubt, desirable in itself, but the tendency of modern commerce and industry is to division rather than to concentration, and it is not easy to see how the tendency is to be counteracted. The suggestion that pharmacists should be encouraged to recommend simple remedies compounded by themselves is a good deal more questionable. The practice is common enough, and it could not be easily checked, but certainly it hardly calls for direct encouragement. "Let there be no pretence of professional medical treatment mixed up with pharmacy," says Professor Attfield, sensibly enough; but it is a little difficult to reconcile this principle with the remark which follows, to the effect that "the druggist's recommendation of simple remedies should be founded on that knowledge and experience which come of much pharmaceutical familiarity with remedies, and on that common sense and perception in all that pertains to drugs with which a properly and specially educated pharmacist might be credited."

If chemists oftentimes do harm by prescribing, it must nevertheless be remembered that as often as not the real fault lies with the applicant for their advice. A man often goes to the chemist's shop not so much for specific advice as for the purpose of obtaining a remedy that he wants, or thinks he wants. He is hoarse, and thinks a gargle will do him good; he is bilious, and asks for a simple purgative or a saline draught; and the chemist has nothing more to do than to give him a remedy which he has compounded scores of times at the doctor's bidding in similar cases. Where is the line to be drawn? Common sense alone can draw it, and the common sense must quite as often be that of the patient himself as of the chemist to whom he applies.

The practice of medical men compounding their own drugs is by no means extinct, though it is discouraged and discountenanced by the medical profession at large. It has its good and its bad side, no doubt, and very likely the evil preponderates.

The following letter appeared a few days later in the *Times* :—

#### PREScribing PHARMACISTS.

SIR,—It seems to me that in your leading article of the 24th you have solved the burning question of the prescribing pharmacists. The practice, as you say, exists, and it is practically impossible to check it. Those among the public who create the practice know perfectly well that a chemist is not a doctor; but to save expense (and perhaps trouble and time as well), they chance the result in the case of seemingly slight ailments. It is possible that some improvement on the existing state of things might be obtained by following the example of the St. John Ambulance Society.

It has been thought not altogether rash to instruct the general public in such rudiments of surgical knowledge as will enable them to offer first aid to the wounded, &c. Now, the pharmacist, although not strictly a medical person, is, by reason of the nature of his education, a good deal more capable of receiving a smattering of medical information than the general public can be said to be, and he would, at

all events, be no more the worse for it than those of the general public are who have learned how to render first aid to the wounded. I scarcely think that such knowledge would make the chemist more rash; on the contrary, I believe it would make him more cautious. The acquisition of such rudimentary medical knowledge need not necessarily form an essential part of his technical education; it might be made quite voluntarily, at all events for experimental purposes; and some such society as that which exists for popularising a smattering of surgery might be formed for conveying to chemists, and to others equally, some rudimentary knowledge of medicine. The justification for teaching a little surgery to the general public is that the layman is generally the person nearest at hand to give immediate assistance to an injured man. The justification of giving some little medical knowledge to the chemist is that, as a matter of fact, he practically occupies very often the same position with regard to the sick, a position which, as a rule, is, as I believe, by no means one of his own choosing.

I am, Sir, your obedient servant,

BALMANNO SQUIRE, M.B.

24 Weymouth Street, Portland Place, W., August 25.

The *Medical Times and Gazette*, in an article on Professor Attfield's address, and alluding especially to the remarks on prescribing by chemists, says:—In this there is a good deal that is unanswerable. Legislation will never prevent people from asking advice about their ailments from anyone whose counsel they think worth getting; they are as free to consult their druggist as their greengrocer, or anyone else. It is just as natural that the tradesman should recommend his wares, and aid the customer to choose an article suited to his wants. But, as Professor Attfield says, it is so difficult to draw the line. If the chemist is to prescribe simple remedies, he must, of course, when the customer's statement of what he needs is imperfect, ask questions to elicit the required information. If he may properly question a sick person as to the symptoms, &c., surely he may use his senses to ascertain the presence or absence of signs of disease; and thus we get to physical examination. And if the chemist does not exceed his duty in examining and treating cases of "simple" disease, what difference can it make whether this be done at his shop or the patient's home? The only safe principle, as it seems to us, is that it is no part of the chemist's duty to prescribe at all. His duty is to prepare, compound, and sell the drugs he is asked for, not to advise upon their utility. Dr. Attfield is not so clear as we should like upon this point; at another part of his address he condemns the chemist who does not know how to test "a fluid excretion for albumen or sugar," and consequently "has driven from his doors the physic-taking patient afflicted with diseases of the albuminoid or saccharine type." To us it seems that testing excretions for albumen or sugar is not the chemist's business. Taking Professor Attfield's own principle as admitted, if albuminuria and diabetes are within his definition of "tiresome minor maladies" requiring simple treatment, we cannot think what would be outside it.

The question of dispensing by medical men seems to us to lie in a nutshell. They do so for two reasons. First, necessity. In many country districts there are no chemists, and hence the doctor must dispense. Second, financial reasons. There are many places in which the people are so poor that they cannot pay an adequate doctor's fee as well as the chemist's profits. The doctor, therefore, to make a livelihood, must unite the two functions, and receive the remuneration of each. If chemists want to get all the dispensing in their own hands, they must reduce their charges so that it may cost a medical man no more to send his prescriptions to a chemist to be made up than it would to keep a dispensing assistant in his own house. And it is almost needless to say that a chemist who wishes medical men to put work in his hands must be careful to keep strictly to his own function.

The *British Medical Journal*, alluding to the same section of the address, remarks:—He (Professor Attfield) would protect counter-practice, while he would put a bar on co-operative distribution of drugs. The usual platitudes are introduced of prudent limitation of the amount of medical practice in which chemists and druggists should "indulge." The druggists' recommendation of simple remedies is to be



"founded on that knowledge and experience which comes of much pharmaceutical familiarity with remedies," and on "common sense and perception in all that relates to drugs." There is here a suggestive looseness of phraseology, and a semi-ironical confusion of meaning. The pharmacist's familiarity with drugs is limited to their pharmaceutical ideas of their solubility, combinations, and incompatibles; of flavours, properties, and activities, he is bound to know something, and may know much; of the diagnosis, interpretation, and forecasting of the states of diseases to which they are applicable, he knows as a pharmacist nothing; and as to what he thinks he knows, as a matter of "common sense and perception," he would be a wiser and far less dangerous person if he knew enough to tell him that his knowledge is more dangerous than other people's ignorance. The gimlet-eye which across the counter penetrates the secrets of his customer's ailments, which can at a glance distinguish "sore-throat" from scarlet fever, "a rash" from measles, "a shivering cold" from incipient typhoid, is the peculiar and disastrous possession of the chemist whom Dr. Attfield cautions while he encourages him. It is the common curse of poor neighbourhoods, and the fertile cause of misery to the deluded bread-winner, whose ignorance leads him to place just that reliance on the "common sense and perception" of the half-educated pretender, which so often costs him and his family dear, and makes his home the scene of disaster and the centre of infection. Stern reprobation of a practice, deceitful in its pretences and dangerous in its consequences, would better have become the president of such a Conference, and would better harmonise with the high attainments, technical skill, and scientific capacity of the orator. It may be doubted whether it would not better support even the narrowest and most selfish interests of the pharmaceutical body.

#### THE BRITISH ASSOCIATION.

DR. SIEMENS did not do justice to the very interesting matter of his Presidential Address by its delivery. Readers of it have a better chance of appreciating it than mere auditors, or rather those who intended to be auditors. It was expected that electrical science would fill a considerable space in Dr. Siemens' address; and it did; but to many readers the most striking feature of this section of the oration consisted in the hopeful words which were added in reference to gas. Dr. Siemens thinks that the electric light will take its place as a public illuminant, and that even though its cost should be found greater than that of gas, it will be preferred for the lighting of drawing-rooms and dining-rooms, theatres and concert-rooms, museums, churches, warehouses, show-rooms, printing establishments and factories, and the cabins and engine-rooms of passenger steamers; but he believes that gas "will hold its own as the poor man's friend," and he further indicates opportunities for the gas companies if they have only sense enough to read the signs of the times. Very striking was his calculation that the bye-products (waste products as they once were) from the gas manufacture are now of themselves worth much more than the cost of the coal consumed. About 9,000,000 tons of coal are consumed annually in the manufacture of gas. The cost of this he estimates at 5,400,000*l*. Besides producing gas the coal yields the following according to Dr. Siemens' calculations:—

Colouring matter .. .. .	£3,350,000
Sulphate of ammonia .. .. .	1,947,000
Pitch (325,000 tons) .. .. .	365,600
Cresote (25,000,000 gallons) .. .. .	208,000
Crude carbolic acid (1,000,000 gallons) .. .. .	160,000
Gas-coke, 4,000,000 tons (after allowing 2,000,000 tons consumption in working the retorts) at 12 <i>s</i> . .. .. .	2,400,000
Total .. .. .	£8,370,000

This shows above all things that gas must certainly be the fuel of the future. When we burn coal we waste all these precious products, and load our atmosphere with soot and poison besides.

The rest of Dr. Siemens' address consisted chiefly of a review of some of the recent engineering advances, especially in relation to navigation. Remarking that when the British Association met last at Southampton, Schönbein announced

to the world his discovery of gun-cotton, he went on to refer to some of Messrs. Noble and Abel's later experiments on explosives. Another experimenter, Professor Himly, of Kiel, has lately proposed a gunpowder in which hydrocarbons precipitated from solution in naphtha take the place of the charcoal and sulphur of ordinary powder. On such powder water has no effect, so that, Dr. Siemens says, the old caution, "Keep your powder dry," may hereafter be unnecessary.

Dr. Siemens made an allusion to his own recently-published theory of the constant maintenance of solar energy by the supposition that all interplanetary space is filled with aqueous vapour and carbonaceous compounds in a state of extreme attenuation, and that this is being continually dissociated by solar heat and the vapours attracted back to the polar surfaces of the sun and again ejected after combustion. This theory he finds support for in recent astronomical and physical discoveries. In his concluding paragraph Dr. Siemens indicated that he did not desire to be among those philosophers who have dismissed the Creator from the universe.

Our space will not allow us this month to give further details of the meeting after we have briefly summarised the address of the President of the Chemical Section, Professor G. D. Liveing. His subject was Chemical Dynamics. In this department of study, he said, chemical science had of late been making the most important advances. The purpose was to render an account of the various phenomena of chemical action on the same mechanical principles as are acknowledged to be true in other branches of physics. To show how large a gap in our ideas of chemical dynamics has been bridged over within the last quarter of a century, he quoted Whewell, to the effect that chemical "attraction" and mechanical attraction were not forces of the same kind, and the power which produces chemical combination is a peculiar principle, a special relation of the elements not rightly expressed in mathematical terms. Our ideas have gone round so as to be now the very opposite of those of this illustrious thinker, and we should ridicule the thought of looking for an explanation of chemical action on any but mechanical principles. Notwithstanding the slowness with which new ideas replace old familiar images, the molecular theories developed by Clausius, Clerk-Maxwell, and Boltzmann, and by Sir W. Thomson, have been long enough before the world to have greatly loosened the hold upon our minds of many old notions. The vortex theory, whether we think it probable or not, at least gives us a standing-ground for the assertion that the supposed impenetrability of matter, and the curious compound of nucleus and atmosphere which had been invented to account for elasticity, are not necessary assumptions. The kinetic theory of gases has analysed for us the different motions of the molecules in a mass of matter, and has facilitated the conception of the part which heat plays in chemical action. Berthelot and Thomsen, of Copenhagen, have done more than any one else of late years towards making it possible to give chemistry the rank of an exact science. Further, the laws of dissociation, so ably investigated by Deville, have taught us that the force called chemical affinity, by which we suppose the atoms of unlike matters are held together in a compound molecule, follows precisely the same laws as the force of cohesion by which particles of a similar kind are united in molecules. We have within the last two or three years learnt that iodine is in part dissociated by a high temperature from molecules consisting of two chemical atoms, and the same is true of chlorine and bromine. But not only the metalloids, but many metals have been found to give complicated spectra at one temperature and much simpler spectra at higher temperatures. When we find that the combinations of particles of the same kind are as definite as those of particles of different kinds, and that they are both subject to precisely the same mechanical laws, we are hardly justified in regarding the forces by which they are produced as essentially different. To get rid of a gratuitous hypothesis in chemistry must be a great gain. But, it may be asked, why stop here? Why may not the chemical elements be further broken up by still higher temperatures? *A priori* and from analogy such a supposition is extremely probable. The notion that there is but one elementary kind of matter is at least as old as Thales, and underlies Prout's hypothesis that the atomic weights of our elements are all multiples of that of hydrogen. This



famous hypothesis has gone up and down in the scale of credibility many times during the present century. A few years ago Mr. Lockyer supposed that the coincidence of rays emitted by different chemical elements gave evidence of a common element in the composition of the metals which produced the coincident rays. Later results cannot fail to shake our belief in the existence of any common constituent of the chemical elements; but it does not touch the evidence which the spectroscope affords us that many of our elements, in the state in which we know them, must have a very complex molecular structure. The spectroscope has in the last few years revealed to us several new metals. Why may there not be elements which, while they differ as little in atomic weight as do nickel and cobalt, are, on the other hand, so similar to one another in all characters that their chemical separation is a matter of the greatest difficulty, and their difference only distinguishable by the spectroscope? Alluding to the ingenious theory by which the President of the Association has proposed to account for the conservation of solar energy, he remarked that if it be true that the compounds are decomposed by absorbing the sun's rays, we ought to find in our atmosphere the products of decomposition; we ought to find it in free hydrogen, carbon oxide, and acetylene or some other hydrocarbons.

The number of members attending the Southampton meeting did not much exceed 1,200. Oxford having withdrawn from the task of entertaining the Association next year, the offer of Southport to do so was accepted. Montreal had sent a most pressing invitation for 1883, but the Association took French leave for 1884. A good deal of soreness prevails, as it is thought the vote to go to Canada at all was rather snatched, and it is also thought that as 1883 was fixed on by the Canadians, particularly as falling in the last year of the Marquis of Lorne's Governorship, the Association may not be so welcome in 1884. Professor Cayley is the President of the Association for next year.

## PHARMACY IN AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

MELBOURNE, VICTORIA, July 8.

THE Tariff Commission have been taking evidence during the week in reference to the manufacture of glass-ware, &c. The principal matter of interest to your readers is that portion which refers to the manufacture of

### GLASS BOTTLES.

Mr. G. H. Jamieson, managing director of the Australasian Glass Company, was examined on behalf of the trade generally, and stated:—"With regard to the manufacture of glass bottles we beg to draw the Commissioners' attention to the small medical or other flint and coloured bottles carrying a duty of 6*d.* per cubic foot. The Customs returns show the totals to be 29,526 feet of the value of 8,522*l.*, the duty paid—732*l.* 19*s.* 9*d.*—being equal to 8½ per cent., this being the only class of bottles that they are and have been for some time past making. Another class of glass bottles—pickle bottles—also made in the colony by the Melbourne Glass Bottle Company, have a duty of 3*d.* per dozen, and the returns for that line of goods for the year 1881 were 11,156 dozen, valued at 280*l.*; duty paid, 171*l.* 13*s.* 4*d.*, or equal to 61¼ per cent. The Australasian Company now employ 80 hands, and pay over 500*l.* a month in wages, but have not yet been able to show a profit to their shareholders. The only glassworks that had been successful in the colony were those of the Melbourne Glass Company, whose products were largely protected. He asked for a protective duty of 3*d.* per dozen on medical and other flint and coloured bottles 16 oz. and under.

Mr. Grimwade remarked that by putting an import duty of 3*s.* a gross on small medicine and perfumery bottles the raw material of other trades would be heavily taxed, these bottles being extensively used in some branches of colonial industry.

Mr. Bosisto: Medicine bottles that cost 9*s.* in England are worth 16*s.* here. Is that not enough protection for you?

Witness: I do not think the duty, charges, &c. amount to 100 per cent.

### DOCTORS DISPENSING.

At the annual meeting of the Pharmaceutical Society of New South Wales, held in Sydney on June 14, some considerable discussion took place in reference to the action taken by the doctors in dispensing their own prescriptions. In speaking on this subject Mr. W. Larmer remarked that a chemist's business was limited; he could not offer his wares as did those in other trades by advertising an "alarming sacrifice," and therefore his privileges needed to be the more closely conserved. Several other speakers followed in the same strain. The result has been that a number of letters have appeared in the Sydney daily papers. The *Sydney Morning Herald*, of June 29, in a leading article on the subject, says:—

"The difficulty between the doctors and chemists is scarcely lessened by the correspondence which has from time to time appeared. Both apologists were anxious to clear the doctors from the 'unfounded aspersions' cast upon them, yet where straight charges had been deliberately made they were not met by categorical denial. The public generally may not regard the quarrel with very active interest, for the simple reason that doctors are usually kept out of mind until they are required, and then necessity and anxiety cloak any little discrepancies that would be resented by healthful and unoppressed faculties. But it is a matter of importance to know the exact relationship of the doctor to the chemist, and all the voluminous correspondence that has been published and read has given very little satisfaction in that respect. It is not necessary or desirable that the profession should be divided by a hard and fast line, that it should be rendered impossible for a chemist to administer a chalk mixture or a black draught, nor that it should be regarded as shockingly unprofessional for the doctor to make up his own prescription, and sell it with his advice. Modern tendencies are rather toward the amalgamation than the division of professions, but such amalgamations must be accomplished on equitable terms, and with intent to serve and not to oppress or mulct the public.

"The charges which the various correspondents have attempted to put aside are of the sort of unholy alliance between certain doctors and certain apothecaries, of combinations formed to shut out competition and divide excessive profit. It is not creditable that such charges should be sustained if made against the profession generally, but it is admitted even in the explanation preferred, that such things have been, and have not been very loudly decried.

"Some doctors have had their pet chemists and some chemists their pet doctors, and each have played into the other's hands, and both upon the patient's purse, with the very best intent possibly, but still in a way that is open to objection and complaint.

"Such a respectable body as the Pharmaceutical Society of New South Wales shows they have power to deal with cases like these, and should not scruple to deal with them when thorough investigation has shown them to exist.

"It is a more honourable and important duty than that of 'boycotting' chemists who have dabbled slightly in medicine, or have administered occasionally to a trifling ailment, and would lead to better results. Rings against honest competition involve more or less protection, and are generally adverse to the public, and such a 'ring' as is now very plainly hinted at as existing between some members of the medical profession and the dispensers of their prescriptions.

"The Pharmacy Society owe it to themselves and to the public to defend the practice or to rebut the charge or break the 'ring.'"

### UNQUALIFIED ASSISTANTS.

A case involving the liability of employed unregistered assistant's was tried recently at the Emerald Hill Police Court, when John Digby was prosecuted by the police for selling poisons contrary to the provisions of the third section of the Sale and Use of Poisons Act. The facts of the case, briefly, were that a man named James Lee had purchased from the defendant, John Digby, who was in the employ of A. J. Wade, a registered pharmaceutical chemist, 6 grains of

strychnine, for the purpose, he stated, of killing rats. Lee took the poison and died. At the inquest it transpired that the requirements of the Act had not been complied with; no label was affixed, and there was no witness to or entry of the sale. The solicitor who appeared for Digby contended that he was not responsible for the sale, having made it for his employer, Wade. The Bench, however, overruled this objection, and fined the defendant 5*l.* and 2*l.* 2*s.* costs for selling, not being qualified, and 10*s.* and costs for not labelling it, and 10*s.* and costs for not making an entry of the sale.

#### THE TARIFF.

The examination of witnesses before the Tariff Commission in reference to acids, alkalies, drugs, chemicals, and patent medicines, &c. will take place next week. The following gentlemen have been nominated to represent the trade:—Messrs. William Bowen, John T. Thomas, C. A. Atkin, and A. Wallworth. The sitting is likely to be a long one.

The following return of the duties has been prepared for the information of the Commission:—

Articles Imported by Land or Sea	Rates of Duty (Tariff of 1879)	Duty Collected 1880	Duty 1881
Acetic acid .. .. .	3 <i>d.</i> per lb.	991	1,239
Acid, muriatic .. .. .	5 <i>s.</i> per cwt.	11	22
" nitric .. .. .	5 <i>s.</i> per cwt.		
" sulphuric .. .. .	5 <i>s.</i> per cwt.		
Drugs .. .. .	—	—	—
Drugs, and preparations of .. .. .	—	—	—
Drugs:—			
Acid, carbolic .. .. .	6 <i>d.</i> per gallon	59	58
" .. .. . pure .. .. .	6 <i>d.</i> per lb.	21	86
" oxalic .. .. .	2 <i>d.</i> per lb.	26	96
" picric .. .. .	3 <i>d.</i> per lb.	—	6
Aloes .. .. .	12 <i>s.</i> per cwt.	6	11
Ammonia, carbonate of .. .. .	2 <i>d.</i> per lb.	171	239
" .. .. . liquid .. .. .	2 <i>d.</i> per lb.	21	32
Cannabis indica .. .. .	1 <i>d.</i> per lb.	—	—
Cocculus indicus .. .. .	1 <i>s.</i> 6 <i>d.</i> p. cwt.	—	—
Faba amara .. .. .	1 <i>s.</i> 6 <i>d.</i> p. cwt.	—	—
Gelatine .. .. .	6 <i>d.</i> per lb.	226	261
Glycerine, pure .. .. .	3 <i>d.</i> per lb.	252	195
" .. .. . crude .. .. .	1 <i>d.</i> per lb.	2	—
Grains of Paradise or Guinea grains	2 <i>s.</i> per cwt.	—	1
Morphia .. .. .	1 <i>s.</i> 6 <i>d.</i> per oz.	34	60
Nitrate of silver .. .. .	6 <i>d.</i> per oz.	15	19
Nux vomica .. .. .	1 <i>s.</i> 6 <i>d.</i> p. cwt.	—	—
Potassium, iodide of .. .. .	10 <i>d.</i> per lb.	69	101
" .. .. . bromide of .. .. .	3 <i>d.</i> per lb.	40	35
Quassia .. .. .	4 <i>s.</i> per ton	1	2
Strychnine .. .. .	1 <i>s.</i> per oz.	128	105
Opium, including all goods, wares, and merchandise mixed or saturated with opium, or with any preparation or solution thereof, or steeped therein, respectively .. .. .	20 <i>s.</i> per lb.	22,315	20,664
Oils, including castor or cod-liver, when refined or for medicinal purposes, in bottles of a quart or less than a quart .. .. .	Quarts, 2 <i>s.</i> ; pints, 1 <i>s.</i> ; ½-pints and smaller sizes 6 <i>d.</i> per doz.	1,718	1,500
Soda crystals .. .. .	40 <i>s.</i> per ton	29	65
Chlorodyne .. .. .	1 <i>s.</i> 4 <i>d.</i> per lb. to Dec. 17, afterwards 25 per cent.	109	57
Stearine .. .. .	2 <i>l.</i> per lb.	—	—
Medicines, patent or called patent, not containing spirits, being medi- cinal preparations or compositions recommended to the public as pro- prietary medicines, or prepared according to some private formula or secret art, as remedies or specifics for any disease or diseases or affec- tions whatever affecting the human or animal body, or being subject to a stamp duty in the country from whence they are exported .. .. .	25 per cent.	6,469	6,932

— The famous or infamous Fenayron trial was at least a gigantic commercial success, if its dramatic aspect was somewhat disappointing. The chemist's shop in the Boulevard Malesherbes, which, in Aubert's hands, was worth 40,000*fr.*, is reaping 500*fr.* a day; and Limonin, the new proprietor or *locum tenens* anticipates reaching 1,000 before the *récoûrs en grâce* (petition for pardon), provided our intelligent countrymen continue to manifest the same passion for pill and cold cream that has distinguished them during the last ten days.

#### THE YARN OF THE THINGEMAGIG.

(Very much after Gilbert.)

'Twas about the year 2,000 odd  
(You'll excuse my poetical way),  
That I tumbled home, o'er the ocean's foam,  
Into Southampton Bay.

I had made a "pile" in the distant West  
As a drug-store keeper, you see;  
And now was a chance to see the advance  
Of professional pharmacy.

Picture me, then, as I tumbled in vain,  
Hunted in every quarter,  
For the ghost of a sign by which to divine  
A knight of the pestle and mortar.

To the Corporation I lied in haste  
(Those great municipal props),  
And I cried to the Mayor, "Oh, tell me where—  
Where the deuce are your chemists' shops?"

That ancient buffer replied in a voice,  
In a voice both squeaky and small,  
"Go look and see where used to be  
Our wonderful Watts-his-name's Hall!"

On the site of that Busy-bee's Hall I found,  
In the midst of a Factory  
Counting his gold, a Patriarch old,  
Who thusly accosted me:—

"Oh, I'm a wholesale and retail man,  
And a maker of chemicals big;  
A roller of pills and a grower of squills,  
I'm Attfield's *Thingemagig*."

"My alkaloids are all home-made,  
My hair oil none can rival;  
In fact, I'm blest, I stand confest,  
Pharmacy's fittest survival!"

Then test-tubes and flasks he whirled about  
Till I wished myself outside,  
And as H<sub>2</sub>S fume pervaded the room,  
Retreatingly I replied:—

"Oh, patriarch old, 'tis little I know  
Of advancement in pharmacy,  
But I'll eat my brain if you'll explain  
How a fellow can possibly be—

"At once a wholesale and retail man,  
And a maker of chemicals big;  
A roller of pills and a grower of squills,  
And Attfield's *Thingemagig*."

"If you ask who made," spake my ancient friend,  
"Such a Jack-of-all-trades new,  
'Twas the boss (sa'd he) of the B.P.C.,  
When it met here in '82."

"A pharmacist's safety was shown to lie  
In boycotting wholesale makers,  
Keeping nothing on his shelf that he hadn't made  
himself,  
Or grown on his own fat acres.

"Ab, ah, the noodles took the bait!  
It looked such a fine fat worm;  
But a *mauvais quart d'heure*, it was to be sure,  
For many a jolly old firm!

"For the wholesale druggists soon exclaim'd,  
'This sort of thing won't do.  
You're awfully clever, but come whatsoever,  
We'll sell to the public too!"



"Next the makers of chemicals all cried out,  
'Our trade they will destroy.  
We'll go in for crops and open little shops,  
And prescribe for the *οἱ πολλοί*!'"

"The rest of my yarn, in brief, is this :  
The pharmacists couldn't weather  
The 'cutting' that ensued, and so, you will conclude,  
They went to the bad altogether !

\* \* \* \* \*

"One word of warning let me add  
Before I say 'Good day':  
Beware, prithee, of the B.P.C.,  
Or *you'll* not live to say:—

"Oh, I'm a wholesale and retail man,  
And a maker of chemicals big;  
A roller of pills and a grower of squills,  
And Attfield's *Thingemagig*!"

### FALSE JALAP ROOT.

**D**R. LANDERER (Athens) sends us the following:—The *Mirabilis Jalappa*, N. O. Nyctaginaceæ, is a garden plant in Greece. Its roots have strong purgative properties, and can be used in place of jalap. When powdered they are certainly used to adulterate jalap powder. They contain a little resin. Lately jalap roots have been brought to Greece, from which the resin has been extracted by boiling with alcohol. The pulv. jalapæ finissime paratum sent thither from France is nothing but the powder of the woody matters left after the extraction of the resin in the ordinary way. In the same way are received pulv. cinchonæ and pulv. ipecacuanhæ, made from the residue left after the preparation of the extract. They are beautiful powders, but they are quoted in the price-currents at less than the raw materials, *aliquod pro aliquo*.

### Personalities.

MR. C. PARKER has succeeded to the business of Mr. Haythornthwaite at Kirkby Lonsdale.

MR. JAMES TILSON has succeeded Mr. J. N. Sutterly at Long Sutton.

MR. HEY, chemist, Bridge Street, York, was seriously injured by the accidental discharge of his companion's gun while shooting on "the first." It is feared that he will lose the sight of both eyes.

MR. HALTON, druggist, of Earlestowne, Lancs., was thrown from a trap which came into collision with a tramcar at Haydock on September 1. He was seriously injured.

THE business of Mr. J. Walker, of 24 Croyley Street, New North Road, N., has been sold to Mr. Hartshorn, through the agency of Messrs. Tench & Taylor, of 38 Walbrook, E.C.

MR. MANFIELD's business at 129 Oldfield Road, Salford, Manchester, has been sold to Mr. F. D. Scholes, through the agency of Messrs. Tench & Taylor, of 38 Walbrook, E.C.

MR. ADAM's business at Winchester has been disposed of to Messrs. E. B. & T. W. Bolton (late of Ipswich), through the agency of Messrs. Tench & Taylor, of 38 Walbrook, E.C.

THE business of Mr. Charles Gold, at Shepherd's Bush, has been disposed of to Mr. John Edmunds (late of Battersea Rise), through the agency of Messrs. Tench & Taylor, of 38 Walbrook, E.C.

### TESTING URINE.

#### FOR ALBUMEN.

**U**RINE containing albumen becomes cloudy, and yields a flocculent precipitate when heated. If not distinctly acid a very similar appearance may be produced in urine quite free from albumen. In such case it may be due to alkaline earthy phosphates, kept in solution by the carbonic acid which they contain, and becoming insoluble when the latter is driven off by heat. This precipitate may be distinguished by the fact that it is soluble in dilute acids, while albumen is not so. A good way to avoid this mistake is to warm the urine until precipitation commences, and then add a few drops of acetic or dilute nitric acid (about two drops to 15 c.c.) and observe if the precipitate re-dissolves. Or the urine acidified, as just explained, may be saturated with sodic sulphate, and then filtered. It will then indicate the presence of any proportion of albumen which will make itself appear at about 50° C. If the precipitate be quite white it is composed of albumen alone; a reddish tint suggests the presence of blood, and a greenish tint the presence of some of the colouring matter of the bile.

An alkaline urine will not give the characteristic coagulum, even though it contain albumen. The free alkali should be carefully saturated by dilute nitric acid. Acetic acid may give with *mucine* (a substance generally present in alkaline urines) a precipitate liable to be confounded with albumen.

Nitric acid forms a precipitate in albuminous urine, but in applying this test it is necessary to remember that an excess of acid will redissolve the precipitate. The proper proportion to use is 1 part of nitric acid of sp. gr. 1.40 to 10 parts of urine. The urine should be in a conical vessel, and the nitric acid gradually poured in while the vessel is inclined, so that the acid will form a layer at the bottom of the urine. If albumen be present a cloudiness will appear at the point of junction of the two liquids, which will gradually extend throughout the whole. If copaiiba, turpentine, petroleum, or styrax be present in the urine, nitric acid will cause a cloudiness, but the odour will suffice to prevent an error from this cause; besides which the precipitate will redissolve if the urine be shaken up with ether or alcohol.

A solution of picric acid, made by dissolving 10 grammes of crystalline picric acid and 20 grammes of pure citric acid in a litre of boiling water, will serve as a test for albumen in urine. It must be added to urine hulk for bulk. Albumen will be precipitated in yellow flakes, which rapidly settle. Peptones in urine will give a similar precipitate, but they may be distinguished by the fact that the peptonic picrate will re-dissolve in nitric acid, but albumen will not, while albumen is coagulated by heat or nitric acid, which is not the case with the peptonic picrate.

Glacial metaphosphoric acid is perhaps the most convenient test for use at the bedside of the patient. It is supplied in small glass tubes. A fragment should be dissolved in a few c.c. of distilled water and added to the suspected urine. It forms a flaky precipitate, or an opalescence, if albumen be present, immediately. This solution should be used the moment it is prepared, as in contact with water the acid rapidly changes to an orthophosphoric acid, which has no effect on albumen.

The colour test of Millon is the most usually employed and is the most delicate. This is prepared by dissolving metallic mercury in its own weight of nitric acid (sp. gr. 1.40) and adding at the same time twice its volume of distilled water. After some time a crystalline precipitate is formed. The supernatant fluid is the test. This, added to a normal urine, forms a yellowish-white precipitate, which remains so or becomes slightly rose-tinted on the application of heat. In an albuminous urine the precipitate is of a rose colour, which is changed by heat to a red or a brown. But it must be understood that Millon's test affects similarly all proteid substances as well as albumen.

#### FOR SUGAR.

Urine containing sugar becomes brownish-yellow or black when heated with caustic potash or soda. Normal urine, free from sugar, after exposure of some days or even hours

to the air, turns brown under the same treatment. Traces of the dyeing matters of galls or their decomposition-products give like reactions, and lastly, the use of rhubarb or senna gives urine the property of darkening in colour when treated with alkalies.

Fehling's solution of alkaline cupric tartrate heated to boiling is decomposed on the addition of urine containing sugar, with the separation of dark yellowish-red cuprous oxide. But the reagent will cause a separation of the oxide when boiled alone, if it contains any of the decomposition-products of tartaric acid, which are always found when the solution has been long exposed to direct light or has been preserved in corked bottles. In normal, as well as in pathological urines, bodies are found, such as urates and the so-called extractive matters, which also reduce the copper solution. Uric acid and alkaline urates give with Fehling's solution a white precipitate of cupric urate, which is finally reduced to cuprous oxide. If the urine is comparatively rich in urates, this reduction may begin with the first addition to the boiling Fehling's solution, leading to entirely wrong conclusions as to the presence of glucose. To detect sugar in such urine it must be acidified with hydrochloric acid, left for a day, and filtered from the deposit of uric acid. When again made alkaline it can be treated with the copper test, or by the bismuth test, which is not affected by either urates or extractive. Not only is the copper solution reduced by other things than sugar, but the reduction by sugar in urine may be prevented by at least two circumstances. If the urine contains much albumen and little glucose, a compound of copper oxide and albumen is formed, which decomposes slowly. Such a urine must be boiled with a few drops of acetic acid to precipitate the albumen before testing for sugar. The presence of ammoniacal salts hinders the reaction, for the reduction of the copper salt by glucose takes place only in the presence of free fixed alkalies. Putrid urine always contains ammonium carbonate, and must be boiled with a little caustic soda to drive off the last traces of the volatile alkali before adding it to the Fehling's solution.

The presence of glucose in urine is also determined by the aid of Böttger's reagent. This is made by rubbing basic bismuth nitrate with caustic soda solution till it has a pronounced alkaline reaction. When this is boiled with urine containing glucose it turns black, owing to the reduction of the bismuth oxide to suboxide and metallic bismuth. The same coloration is produced by the formation of bismuth sulphide by sulphur compounds in the urine. But in the latter case the blackening takes place in the cold, while glucose affects the colour only on boiling.

Another test for the presence of sugar in urine is fermentation by beer yeast. The carbon dioxide produced is led into lime-water, and estimated as calcium carbonate. Often, however, a temporary evolution of carbon dioxide, which soon ceases, takes place when the urine contains no sugar. The yeast itself is often saturated with saccharine fluids, and should be carefully washed with distilled water before using it for this test.

The articles from which the above are abstracted appeared in the *Schweiz. Wochensh. für Pharmacie*, where they were quoted from papers by Professor Bruylants in the Annals of the Medico-Chirurgical Society of Liège. The following useful note appeared subsequently in the former journal from Mr. Hahn, of Geneva. Professor Bruylants' explanations of the causes of error in estimations are valuable in doubtful cases, but the following simple method of procedure is quite accurate in all ordinary cases.

To discover sugar in urine he boils in a test-tube equal parts of urine and concentrated solution of caustic potash. If this does not produce an increase of colour he is satisfied that there is no sugar. If it becomes of a deeper colour, turning to a reddish brown, he proceeds to test with Fehling's solution, not too old, diluting with 20 parts of water, and adding only a little urine. If this produces an abundant orange-yellow precipitate, he considers the presence of sugar proved. To titrate this he employs Mitscherlich's polarimeter, having first decolorised the urine by acetate of lead.

To test for albumen he pours a layer of urine on a layer of pure nitric acid, carefully, so as not to mix the liquids.

The smallest proportion of albumen produces a characteristic white ring at the point where the two layers meet. He considers this test a very sure one. It is liable to only one cause of error. If the urine be too concentrated it may occasion a somewhat similar white ring, but rather higher up, but this can be checked by diluting the urine in such case with one or two parts of water.

## REVISED PARCELS RATES.

IN anticipation of the parcels post, the Great Northern, Midland, Great Western, and the London and North-Western Railway Companies adopted, on September 1, the subjoined reduced rates for the carriage of parcels:—

FOR DISTANCES	WEIGHT NOT EXCEEDING	For each additional lb. above										
		1 lb.	2 lbs.	3 lbs.	4 lbs.	5 lbs.	6 lbs.	7 lbs.	10 lbs.	14 lbs.	15 lbs.	16 lbs.
		4	6	6	6	6	6	6	6	6	6	6
Not exceeding 30 miles	31 miles and	4	6	6	6	6	6	6	6	6	6	6
"	51	4	6	6	6	6	6	6	6	6	6	6
"	101	6	6	6	6	6	6	6	6	6	6	6
"	201	6	6	6	6	6	6	6	6	6	6	6
"	301	6	6	6	6	6	6	6	6	6	6	6
"	401	6	6	6	6	6	6	6	6	6	6	6
"	Above 400	6	6	6	6	6	6	6	6	6	6	6

The Globe Parcel Express has simultaneously adopted a uniform charge of 3d. for a 1-lb. parcel for all parts of the kingdom and a reduced tariff for all other parcels, the charge for a parcel weighing 14 lbs. varying from 6d. to 1s. 6d., according to distance. It is also prepared to collect "cash on delivery" for the value of goods at a charge of 1½ per cent., or not less than 6d., and to insure valuables to any amount.



## ABORTIVE TREATMENT OF GONORRHOEA.

MR. W. WATSON CHEYNE communicates to the *Lancet* an account of his method of treating gonorrhoea. He first published it in 1880 in the *British Medical Journal*, and further experience confirms his conclusions. He starts with the theory that the symptoms are caused by the growth of some organism in the mucous membrane of the urethra. If these can be destroyed or their growth stopped the disease will disappear. The treatment he adopts is intended to keep in contact with the mucous membrane for a considerable time substances which kill micro organisms. Iodoform and eucalyptus oil are the two drugs chiefly employed. The iodoform is made into solid rods with cacao butter. The rods are 4 or 5 inches long, and about as thick as a No. 10 catheter. Each weighs 40 grains, and contains 5 grains of iodoform. The following is the mode of procedure:—The patient is told to pass his water; he then lies down, and an iodoform and eucalyptus rod is dipped in eucalyptus oil and passed into the urethra; a small pad of boracic lint is applied over the orifice, outside this a large piece of gutta-percha tissue, the whole being fastened on by strapping. He is told to allow this to remain on as long as he can, generally about five or six hours. He then takes it off, passes water, injects one or two syringefuls of the sulpho-carbolate of zinc solution (2 grains to an ounce), and if the case is very acute another rod is introduced. Afterwards he uses the sulpho-carbolate of zinc injection as often as he can (six or seven times a day generally), always passing water before its use in case any infective material remains in the urethra, which might be driven back before the injection. Mr. Cheyne always recommends that a piece of boracic lint be kept over the orifice of the penis to absorb the discharge; this can be retained in position by drawing the prepuce down over it. A purge is administered at the first, and the bowels are afterwards kept freely open by salines. Copaiba is also given in half-drachm doses thrice daily from the beginning. The patient is further cautioned against the use of beer or spirituous liquors, &c. After three or four days, when the acute symptoms have subsided, an injection of sulphate of zinc, tannin, acetate of zinc, or, indeed, any of the astringent injections in common use, is substituted for the sulpho-carbolate, which, in his experience, though the best injection at the beginning, does not, as a rule, arrest the discharge in the chronic stage nearly so rapidly as some of the other injections. After the discharge has ceased the injection, and possibly, also, the copaiba, at any rate the restrictions as to the drink, ought to be continued for four or five days, so as to avoid a recurrence of the discharge. The average time from the commencement of the treatment to the complete cessation of the discharge was 9·9 days in 41 hospital cases. It cuts short the acute stage of the disease, and brings it rapidly to the chronic stage.

In a letter to the *Lancet*, referring to the foregoing, Dr. Beresford Ryley, formerly visiting surgeon under the Contagious Diseases Acts at Woolwich, gives his method of treatment, which is similar in principle to that of M. Cheyne. First he separates the walls of the inflamed urethra by ordering injections of hot water to be retained for 20 minutes or longer when practicable. For this he recommends a spring forceps made by Messrs. Krohne & Sesemann. Such injections should be frequently used. Hot injections within the urethra and hot baths and the application of flannels wrung out of hot water to the parts externally are very beneficial. He gives the liq. copaiva comp. of Messrs. Hewlett & Sons after a few days under the treatment indicated, and at the same time adds three drops of liq. plumbi to each ounce of the injection, which must now be made with distilled water, and used less warm, or altogether cold. In some cases weak injections of nitrate of silver or chloride of zinc may now be of great use. The regimen must be strictly non-inflammatory in the acute stage.

Other correspondents of the *Lancet* add reports from their experience. Dr. Underwood, Edinburgh, says:—"I have used 2-drachm doses of sandal-wood oil three and even four times a day in the prodromatory and inflammatory stages of the disease, especially in 'primary cases,' with well-marked results. The purulent secretion has been com-

pletely arrested within 30 to 48 hours, rarely continuing for 72 hours. The *modus operandi* I cannot explain, but have followed up the cessation of the discharge for three or four days by urethral injections of chloride of zinc (preferring the liquor of the British Pharmacopoeia in the preparation of the same). In some instances where I omitted the injections, I found the discharge reappear on the discontinuance of the oil. I might add that by the above method of treatment the inflammatory sequences are reduced to a minimum. I do not recollect whether the remedy has ever been suggested before, but in my Indian experience I have obtained very beneficial results in the treatment of paroxysmal hæmaturia with large doses of the oil, though not so large as those suggested above."

"A Student" (Abergele) writes:—"The best treatment I have found might be summed up with the following:—Internally, 3 minims of the oil of turpentine and 1 oz. of infusion of buchu, three times daily. Locally, warm-water injection, followed directly by the following: Two drachms of hydrastis Canad., 2 drachms of subnitrate of bismuth, and 4 drachms of glycerine, with sufficient water to make 4 oz., which should be retained in the urethra as long as possible. The nitrate of silver, sulphate of zinc, &c., locally I found worse than useless, and from personal experience I should certainly never prescribe any of them."

"M.R.C.S." also writes in the *Lancet* strongly in opposition to the abortive treatment. He has had considerable practice in this disease and some personal experience, and his system, he claims, is a positive cure. He says:—"I get 1 lb. of roughly-ground cubebs (I grind my own, and so can rely upon its freshness); this I put into a 200-oz. wide-mouth bottle of commerce; to this I add 2 oz. of the iodide of potash, with cold water to fill the bottle, into the mouth of which I drop several large lumps of camphor, simply to make it keep. This I shake up two or three times a day for a few days, of course keeping it in a very cool place, afterwards pouring off the clear infusion, which I administer to my patients in regular consecutive doses." The spent cubebs he throws away. How the iodide of potash acts he does not know, but he finds that it neutralises any acidity in the urine, and kills the virus much more effectually than any other preparation of soda or potash does. Injections he does not recommend, but if he does use one it is an infusion of cubebs with 1 grain of morphia, used warm, and only passed a short distance down the passage of the urethra.

## CRICKET.

MATCH played at Nunhead on September 2 between the clubs of S. Maw, Son & Thompson and Hodgkinson & Co.:

S. Maw, Son & Thompson.		Hodgkinson & Co.	
Greenfield, c Todd, b Whitcher	23	Todd, b Burningham	3
Pyne, b Todd	5	Gatehouse, c and b Burningham	5
Frampton, b Whitcher	1	Whitcher, b Burningham	3
Newman, c Lewis, b Whitcher	11	Lewis, c Burningham, b Greenfield	14
Burningham, c Whitcher, b Lewis	15	field	0
Wallace, run out	3	Jerrett, run out	0
Clark, c Todd, b Whitcher	21	Millard, b Burningham	1
Brassett, b Lewis	0	Partridge, c Pyne, b Greenfield	4
Partis, b w, b Whitcher	0	Prentice, b Burningham	0
Williams, b Whitcher	0	Wilkinson, b Burningham	0
Thomas, not out	0	Hutchinson, b Burningham	0
Extras	13	Nash, not out	0
	92	Extras	9
			39

ANOTHER INVENTION FOR THE BENEFIT OF "THAT BLESSED BABY."—Mr. Cowan, of Glasgow, the vaccination-shield inventor, has produced an arrangement in white and red to serve as a pocket for the feeding-bottle, with braid to hang it in front of the young gourmand. Mothers know to their cost that Baby's natural propensity, when sated for the moment, is to push the bottle on the kitchen stones, or on the hardest attainable surface—ungrateful for past and careless of future pleasure. This pocket will considerably circumvent such iconoclastic tendencies, as the bottle is secured by buttoning, and the talent for managing those buttons does not arrive until the bottle is forgotten. The pockets fit any bottle and almost any baby. They are supplied in dozen boxes, with a photograph of one in actual use.

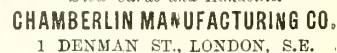




SEE SEABURY & JOHNSON'S Advertisement of INDIA.  
RUBBER POROUS AND SPREAD PLASTERS on page 115.

**W. Butcher & Co**  
WHOLESALE & EXPORT HOMŒOPATHIC CHEMISTS  
315 REGENT ST., W., AND SPENCER PLACE, BLACKHEATH, S.E.

TRADE ADVERTISEMENT.  
PRICE LIST ON APPLICATION.  
51 BERNERS STREET, LONDON.



WE have on more than one occasion endeavoured to address words of help and encouragement to students on the occasion of resuming their studies at the commencement of a new session. With very much sympathy for them in their labours, and an earnest desire for their welfare, we would again take this opportunity of addressing them, even at the risk of being considered prolix, by recapitulating, to some



extent, what we have already said on previous occasions. We are not among those who despair of the future of pharmacy. We neither believe that it is shooting Niagara, nor that its best interests are abandoned for the cheap and nasty. There has not been a decade in its history for the last 50 years in which croakers have not abounded who have predicted such things of it, nor have there ever been wanting those who have clamoured for the Legislature or other powers to avert these evils, and help them to attain the impossible, and, let us add, to attain the undesirable even were it the possible. Pharmacy has survived hitherto, and if its most bitter enemy will not admit that it is now in a better position than ever previously, neither can they assert that it is in a worse. The truth is, difficulties will arise in every age, and they are probably no greater in the present than they have been in previous times. The special features change, but the difficulties themselves are ever present, and no strange thing has happened to the present generation in the crisis through which, as is constantly being asserted, pharmacists are now passing. For the sake of students of pharmacy, we think it important that this should be emphasised. By the dismal picture so frequently portrayed of its decay and ruin students of ability are certain to be driven from its ranks as a profession, while all are apt to become half-hearted and discouraged, and *cui bono* is the despairing response to every endeavour after a higher platform. We have no such gloomy forebodings of the future of pharmacy, and knowing that courage begets courage, we wish to point out to all, but particularly to students, some elements which, entering into their future conduct, are certain to make their career neither useless nor unsuccessful. The dual character—trade and profession—of pharmacy in this country has been frequently pointed out, and we refer to the trade aspect at present merely for the purpose of saying that, if it is meanwhile to be retained, it ought to be conducted on trade principles. We know of no pharmacist who can as yet (we do not predict the future) dispense with this, the lower side of his business, and we are compelled to add that we know but few who have learned regarding it the first principles of commercial success. It is to the higher side that we all cling, and to which we look for future advancement, and it is with reference to this higher side that our remarks will mainly apply.

Without further preliminary we would put devotion to our profession as one of the grand primary elements of success. By this we do not mean that grinding slavish power which compels many to wear out this life by a never-ending day and night labour, through terror, not that they fail in duty, but through terror that a paltry coin may escape them and pass probably to a more needy brother. What we do mean is that intense love for our profession which will compel us to make conscience of every duty, the dusting of a bottle or the washing of a measure glass equally with the preparation of a chemical or the elimination of an alkaloid. The labours of the pharmacist are many-sided, and even in higher pharmacy there are many lowly duties to perform which are necessary to its very existence—not to say success. How often, for example, when priding ourselves on the proper equipment of our dispensary, have we been mortified to find, not one, but several small and very vulnerable points which a little more care and attention might have avoided. They were "the little rift within the lute," and if such are to be avoided this care and attention can never be relaxed. Life itself is in most part made up of small duties, none of which can be omitted without friction and loss. Another primary element of success consists in bringing all our skill and knowledge, as well as all the information which we can possibly get from every quarter to bear upon

our own profession. This is a much more difficult matter, and requires more experience and skill than most would at first be inclined to suppose. The student trained in every department of scientific investigation will find himself at first very much at sea in reducing the knowledge of his student life to the every-day practical work of the pharmacy. His work, for example, will not consist merely or even mainly in the detection of unknown substances, or the extraction of alkaloids, or the discovery of impurities. It will probably be a combination of all these in a direction and with a result entirely novel to him; but in the midst of it all there must have been something very much amiss in his training if it has not taught him what the mathematics of our early school days taught us, namely, that there is often more in the application of a fact than in the fact itself. There is not much in the knowledge that two parallel lines can never meet, or in the fact that  $H_2O$  constitutes water, but between the lines and beyond them there is a whole world of application and inference. In the same way there must be something very much amiss in our training if it has not taught us how to acquire some information from whatever our eyes see, our ears hear, our hands handle, which may not afterwards be applied to our own profession. We have come across those who could peruse a whole volume of art, or traverse a complete museum of science, without a thought ever passing their mind that they might gain a single inspiration, or apply some of the genius so richly spread before them to their own profession. It requires no prophetic foresight to predict that such will never make their mark on their profession. Another very important element of success consists in keeping abreast of the investigations and discoveries of the day. We live in stirring times, and the many important discoveries are not more characteristic of the present age than are their immediate practical utilisation. It may not be given to many in our ranks either to make some great discovery or to apply those made by others to some great practical use, but it is in the power of all, and we should add that it is the duty of all, to make themselves at least familiar with them. We would press this point, as it appears to be part of our nature to get more and more conservative, particularly as regards innovations and changes, as we get older, and it is our own experience that it is not easy to tell where conservatism ends and prejudice, not to say positive fossilisation, begins. The pharmacist for pharmacy, not less than pharmacy for the pharmacist, must be our one grand aim, and just as pharmacy derives its existence from no particular art or science, but is in a certain sense the offspring of all, so also must the pharmacist aim to derive his skill and knowledge, not from one particular department, but from all in their order. Now there are three different directions from which the pharmacist, maintaining an intelligent observation of all that is going on around him, is certain to derive both moral and material support. First of all, the community by which he is surrounded will be glad to avail itself of his special knowledge and skill, and just as the mass is quick to discover and appreciate ability in any direction, so also is it generous in its support of those in whom it has acquired confidence. Our own experience in this respect is that the confidence and support will always be in excess of the merit. Next, the medical faculty will be found more disposed to recognise and support the claims of the educated pharmacist. We have no wish to raise the vexed question of the relation between the medical body and the body pharmaceutical, but this we would say, that if ever there is to be a better understanding between the two parties, it is not probable that it will be accomplished by any universal

movement emanating from either body, and it will most certainly not be accomplished by any system of retaliation, recrimination, and abuse. Pharmacy for the pharmacist by all means, but the first step to this—and in this first step, whatever the Legislature may do in the future in making education compulsory, in the true spirit of our remarks there never can be compulsion—the first step, we say, to this is the pharmacist for pharmacy. No compact between either body, and, above all, no compact with the Legislature, will ever make a medical man have confidence in any individual pharmacist. All that these powers can do is to suggest, or at the very utmost direct into a general channel, they never can and never should apart from merit cause to flow in any individual direction. And after all that has been of late said and written on this subject there have not been wanting evidences these years past, and much more of late, of the disposition of medical men to trust pharmacists where it was possible to do so. There are not wanting evidences that they will be compelled to do so much more in the future. The rapid strides which science has of late years been making, the application of discoveries in various directions, and the general tendency to conserve effort and subdivide labour, are all pointing towards one conclusion, and that conclusion, pharmacy for those pharmacists who are most worthy of it.

Lastly, there is the support which an educated pharmacist ever receives from those of his own profession. Avoiding the personal we appeal to the whole history of pharmacy, and ask if those who have ever come to the forefront are not those also whose abilities have been generously recognised by their brethren, and, being recognised, have also become those whom they delighted to honour? We question in this respect if there has ever been a case of recognition of merit on the part of the public or the medical profession which has not first been recognised and, as far as it was possible, also rewarded by those of our own profession.

There is still one more element of success which we would wish to mention, and to which we attach some importance, namely, thorough sympathy with the aims and end of our profession. We are what some may be disposed to call sufficiently antiquated to believe in and reverence the story read to the whole world some 18 centuries ago as to who was our neighbour, and the treatment a neighbour requires at our hand. Let that story permeate our lives, and our sympathies will ever be keen and active. It is with sickness, and suffering, and distress in one form or another, directly or indirectly, with which we have ever to do, and the more closely we can identify ourselves with these the more will we realise the higher aims and end of our calling. Man cannot live by bread alone, and there is a success greater even than gaining a competence—the success, namely, of an earnest, sympathetic, generous life. This, at least, is within the reach of all.

### THE BRITISH PHARMACEUTICAL CONFERENCE.

THE opportunity for pleasant reunion and discussion once a year among men of similar pursuits and interests, afforded by the British Pharmaceutical Conference, has not been accepted to much more than an infinitesimal extent by the chemists and druggists of this country. From the 118 names inscribed on the register at Southampton, deduct those of residents, and those of gentlemen interested in pharmacy, and therefore among those for whom the Conference was founded, yet not actual shop-owners, and some 50 or 60 may remain. This number can hardly be what was

expected by those who prepared the scheme of the Conference, and hoped by its aid to bring together annually so many members of the trade as felt an interest in the promotion of interests a little outside of, but not unconcerned with, the business generally.

These lines are written in the midst of the pharmaceutical festivities at Berlin. We have no inclination to follow some prominent examples and estimate everything English by a German standard, but it must be admitted that the difference between the annual gatherings of English and German pharmacists is very striking. The German Apotheker-Verein wanders all over the Empire, like the British Pharmaceutical Conference; it only happens that it meets this year in Berlin. Its membership numbers 2,760, and the apothecars actually present are more than 500, a large number of whom bring their wives. The majority do not pretend to care much for the official transactions; some 300 were present during the president's address, but generally the attendance did not much exceed 100. The rest were in the exhibition, in the gardens adjoining, drinking beer with old friends, or wandering about the City. The visit is understood to be a holiday and is enjoyed as such. A full programme of entertainments is provided, including a dinner, a supper, a ball, and visits to a theatre and Zoological Gardens. All this is rendered possible, because each participant pays for his ticket, though it hardly seems possible that the whole cost can be covered by the 15s. for gentlemen and 10s. for ladies, which is the price fixed. It is quite likely that when a system of charging an inclusive price for all who share in the enjoyments is adopted in England, pharmacists, who are not less delicate than other men, will begin to attend the conferences more freely, and thus the original idea of them will be more fully realised.

Now to refer particularly to the Southampton meeting. We have written elsewhere of the President's address, which it must be said gave the 1882 meeting its character. The papers read were many of them useful, but none of them were of startling interest. Several were professedly fragmentary, and a few gave internal evidence of having been got up for the occasion. The discussions were perfunctory, and only once or twice the subjects alluded to seemed to excite any general interest.

Mr. Jackson reported a laborious examination of oils of cassia and cinnamon with the object of discovering wherein lies the difference between them. For the present his conclusions are but vague. Mr. Gerrard has ascertained a few more facts respecting belladonna, and Mr. Holmes helped to arrange the confused knowledge concerning the aconites. Those were papers which distinctly promote pharmaceutical progress. Dr. Quinlan brought forward a forgotten use of the plantain as a styptic, and has done service, if other experience should confirm his own. Mr. Shenstone's experiments on oil of lavender, and Mr. Parker's description of terpin hydrate and its crystallography were of chemical, but not primarily, pharmaceutical interest. Dr. Tichborne seems to have improved in exactness, though not in principle, Clarke's test for hardness in water. The President's account of the new U.S. Pharmacopœia, and Professor Redwood's criticism thereon, disappointed the audience. Professor Atfield had only received a portion of the Pharmacopœia, and nearly, if not quite, all of what he stated has already been published in this and other journals. Dr. Redwood had only seen the sheets for about 15 minutes. Of course criticism was out of the question, and Dr. Redwood, who appeared to be on the point of making some startling revelation in reference to the British Pharmacopœia, got through his speech without committing himself to more than the statement that a



new British Pharmacopœia is getting within measurable distance, and that when it appears some slight alterations may be expected.

Dr. Symes described three Brazilian drugs, which, however, have yet to establish their therapeutical reputation before his pharmacological observations assume a practical value. Messrs. Naylor and Braithwaite contributed a paper, which must be very important to all analysts, in reference to arsenic estimations, and Messrs. Fletcher and Cooper showed a previously unnoticed *yellow* iodide of bismuth, which might easily be taken for iodide of lead, especially in testing bismuth according to the B.P. directions.

Mr. Brownen's investigation into the effect of the digestive ferments on certain drugs and medicinal chemicals are suggestive, but do not at present yield any important conclusions.

Mr. Bothamley has examined some microscopic organisms found in solutions of sodium phosphate and other inorganic bodies, and has defined the organisms. His suggestion that they may be a delicate test for phosphoric acid is ingenious, but needs proving.

Mr. Giles does service in recalling attention to the unsatisfactory Pharmacopœia position of cinchona; and his simple method of assay may be a convenient one.

Mr. Gerrard, whose contributions are always practical, gave the results of his experience in making an ammoniated fluid extract of ergot, and will no doubt save a good many pharmacists the trouble which he has himself had before getting at a satisfactory formula.

Those who handle chloride of gold will no doubt be thankful to Mr. Branson for the trouble he has taken to test the weight and value of several samples in the market. Mr. Woodland's results with crystals of nitrate of silver of commerce caused some surprise, if not doubt. That the caustic points are not pure nitrate of silver was quite well known before. A report on the morphia strength of various samples of tincture and liquid extract of opium, also by Mr. Woodland, was valuable.

Mr. B. S. Proctor directed the attention of the Conference to the usefulness of methyl orange as a test for acid; and it may be noticed that in the course of the Conference litmus had a particularly bad time of it, the President, Messrs. Proctor, Tichborne, Dunstan, Naylor, and Parker all having an unkind word for it, on the ground that its indications are gradual and not exact. Mr. Proctor also presented a paper, humorously expressed, on certain impurities which he had found in a sample of a concentrated solution of iodide of iron. Mr. Proctor's results were spiritedly challenged by Mr. Fletcher, and the former not being present Mr. Fletcher had something like a "walk over."

The other papers were on the solubility of salts of morphia, by Mr. Dott, who took this opportunity of criticising the conclusions arrived at by two American chemists; on a somewhat elaborate process for distinguishing starches by treating them with solutions of caustic soda and heat, by Mr. Symons; a note on a mixture containing perchloride of iron and glycerine, by Mr. Schacht, showing that glycerine has a tendency to reduce salts of iron from the ferric to the ferrous condition, and has also a tendency to retard the oxidation of ferrous salts; chemical notes on glycerine, by Mr. Dunstan; and an investigation into the solvent powers of glycerine on boric acid at various temperatures, by Mr. D. Hooper.

For a meeting which, as we said, was regarded as somewhat poor one, the foregoing record of pharmaceutical work is not unsatisfactory.

## PROFESSOR ATTFIELD ON PHARMACY.

THE Presidential Address of Professor Attfield to the British Pharmaceutical Conference in August will command the attention and the interest of all pharmacists who read the English language throughout the world. We need not comment on its ability: the most cursory reader will recognise that. From beginning to end of the address the author manifests an acquaintance with the position and difficulties of the trade, and suggests ideas of so much practical value that no pharmacist who takes a living interest in his business can afford to pass it over.

Professor Attfield intimates in the early portion of his address that he shall almost avoid pharmaceutical politics. In that design he has utterly failed. He discusses most of the topics which are generally included under that comprehensive title, and on all he provokes thought, and sometimes opposition.

The opening paragraphs of his address, in which he surveys the duties and the range of pharmacy, are eloquent and true. Pharmacy has a most important duty to fulfil towards the State, that is, to the public—a duty which, somehow or another, by some people, few or many, chemists and druggists or others, has to be accomplished, and will have to be accomplished for many ages yet. The pharmacist is not going to die out, and his work has sufficient utility to the community to make it both necessary and honourable. This Professor Attfield shows very forcibly, and then he proceeds to analyse pharmacists themselves. For those who are traders and traders only he has no word of disrespect; but he justly, and even kindly, reminds them that as traders they must be prepared for the sharp competition of trade, and he boldly advises the mere trader to meet the attacks of competitors by adding their trades to his as auxiliaries. "The sooner such a man realises his position and adds to his trade the trades of those who otherwise will supplant him the sooner will he be saved from ruin." Further on, though we may mention it in this connection, he enters a protest, which seems to us most timely, against the practice, far too prevalent among "chemists" and druggists, of abandoning the trade in *chemicals* to the oilman and the drysalter. To so great an extent is this done that it forms the chief difficulty in the way of adding oil of vitriol and similar articles to the poisons schedule.

That the educated pharmacist has a better hope of success than the uneducated pharmacist, other things being equal, is very much like a truism; that to win the confidence of physicians and public is a process which can be estimated in sterling coin, and not only in barren glory, is a fact which is worth repeating; but we are rather sceptical as to the prospects of the accomplished young student fresh from Bloomsbury, who, setting up in business in a country town, should adopt Dr. Attfield's implied advice too literally, and set to work to be his own manufacturing chemist and pharmacist. If he love his profession "as he ought to do" he will certainly find the occupation interesting; and, with a sufficient private fortune, he may be able to hold on until he can, perhaps, work up something like a wholesale connection, thus helping to perpetuate the class which Dr. Attfield aims to put down; or he may work at pill-making and pill-coating from an artistic love of such work, and may in time produce a fair approach to the perfection which wholesale makers attain with costly machinery; but it is a simple arithmetical fact that the time thus spent may be more profitably employed. His rival who spends the same amount of time in working up an aerated-water business, for example, will probably get rich quicker than he. Unques-

tionably the pharmacist should have a sound acquaintance with manufacturing processes and their products, but when he carries on pharmacy for the sake of getting a living, he must be allowed to use his judgment as to the most economical employment of his time. The idea that, because the Pharmaceutical Council have adopted Dr. Attfield's proposal of a compulsory curriculum, all troubles are coming to an end, breathes such an aroma of holy simplicity that we forbear to criticise it.

The drug farms which Dr. Attfield suggests would possibly be successful, and would certainly be interesting and valuable; we shall be glad to see that idea fructify.

His comments on the relations of pharmacists to medical men, on counter practice, and on patent medicines, coincide so nearly with views which have been often enunciated in these pages, that we need do no more than express the satisfaction with which we read them as the opinions of so clear-thinking an authority. On one other topic, however, evidently treated *con amore* in the address, we must venture to dissent. We refer to the paragraph headed "Legislation."

Professor Attfield says:—"For a State to assert that druggists must be qualified is only, in other words, to proclaim that drugs should not be sold by unqualified persons: the one proposition is involved in the other." This looks like a logical sequence; it is no doubt welcome to many of those addressed; and the speaker's first critic pronounced the proposition incontrovertible.

We have no desire to discuss here the desirability or otherwise of protecting the sale of all compounded drugs; that may or may not be the case; but we entirely fail to recognise that the Legislature has at all committed itself to any such policy by passing the Pharmacy Act of 1868, and we see no advantage to be gained by the propagation of the theory. The Legislature has asserted that all persons calling themselves chemists and druggists shall be qualified; but that is a long step from the claim that all dealers in drugs shall be qualified. The principle of the Legislature is quite clear and concords with the principle in which medical, dental, and other professional legislation is framed. It is expressed in one sentence by the late Medical Acts' Commission in regard to medicine, and they have avowedly followed it. They say, alluding to the Medical Act of 1858:—"Parliament was not prepared to enact that registered persons alone should practise medicine or surgery; but it seems to have assumed that if a statutory distinction were drawn between registered and unregistered practitioners, the public would know how to protect itself against unqualified persons." The monopoly of the sale of poisons is granted to chemists and druggists, not at all as a reward for their studies, but purely out of consideration for the public safety, and in order to provide a means of tracing such sales. Provision is made for adding to the number of scheduled poisons when the Pharmaceutical Council on behalf of the trade, and the Privy Council on behalf of the public, shall deem such additions necessary. But the appointment of the check on the former body is the best evidence of how far Parliament intended to go in the direction of protection. Of course a new temper may arise in the Legislature, but under present conditions it must be evident to everyone who will think over the matter that it would be an absolute waste of time to ask Parliament for pharmaceutical protection, as such, or to claim X. Y. Z. as a logical result of having obtained A. B. C. And after all Parliamentary protection is not such a valuable thing as it looks. A little energy is worth a great deal of it. Dr. Johnson might have addressed to chemists and druggists expressly, his lines, "How small, of all that human hearts endure, That part which laws or kings can cause or cure."

## AMERICAN PHARMACEUTICAL ASSOCIATION.

THE American Pharmaceutical Association assembles for its thirtieth annual meeting at Niagara Falls from September 12 to 15. The entertainment committee is headed by Mr. George J. Seabury, and the programme arranged is gorgeous. The Association meets *ter in die*, at 9 A.M., 3 and 8 P.M. While the gentlemen are doing their business in the afternoons there are special excursions, concerts, and other excitements for the ladies. On the evening of the 12th there is, or, we ought now to say, there was, a reception and promenade concert, on the 13th the A. P. A.'s hall, on the 14th a banquet with "three-minute speeches" (!), and on the 15th Niagara Falls by electric light, and concert. The proceedings will be rounded off by excursions down the St. Lawrence, past the Thousand Islands, and home to New York by three alternative routes. The programme has this mild trace of the "spread eagle":—"Caution.—Indian relics (???) and fancy Caucasian beadwork (!), purchased on the Canadian side, are subject to duty on the American side; it is but prudent and just to state that, after careful investigation, we (the committee) are of opinion that similar goods can be purchased cheaper on the American than on the Canadian line of Niagara Falls."

## THE GERMAN APOTHEKER-VEREIN.

THE association of the pharmacists of Germany under the title of the German Apotheker-Verein assembled this year at Berlin from September 5 to 8, being the eleventh meeting of the Verein since it has represented the whole of Germany. The Verein assembles each year at a different town. A fee of 15s. for each gentleman and 10s. for each lady allowed members and their friends to take part in all the festivities which had been provided by the Berlin local committee, with Dr. Schacht as their head. In connection with the meeting was an exhibition of drugs, chemicals, and apparatus used in pharmacy. The meetings were held in a handsome concert-hall known as the Resource zur Unterhaltung, and the exhibition was in a series of smaller rooms in the same building.

Business was commenced by the President, Dr. Brunnengräber, of Rostock, whose sonorous eloquence has been heard in Bloomsbury Square. His address consisted of reading the annual report of the Executive or Directorium, intercalating it with explanations and comments delivered extempore and at some considerable length.

It is not necessary here to give any detailed report of the proceedings. These included reports of the Finance Committee, of the Benevolent Fund Committee, of the "Archiv" Committee, and so on. Three special papers were read among the more general business. The first was a lecture by Prof. Reichardt, of Jena, the editor of the *Archiv der Pharmacie*, "On Volumetric Analysis." He pointed out the extreme sharpness of certain reactions, and illustrated this by producing a marked colouration in solutions of caustic soda containing respectively 1 m.g. of the base in 1,000 and 10,000 c.c. of water by the addition of a small quantity of phenol phthalaine. Dr. Von Waldheim, of Vienna, President of the International Pharmacopœia Commission, read a paper in which he explained what had been done hitherto in regard to the production of the proposed work. It appears that all the countries invited have appointed delegates to co-operate in the work with the exception of Spain. There was also a lecture by Dr. A. Tschirch "On Micro-chemistry."

Among the other business of interest may be mentioned



the election of Dr. de Vrij and of Dr. Hermann Hager as honorary members; a resolution proposed by the Directorium and adopted by the Verein condemning an ordinance recently issued officially in Saxony, permitting the employment for retail work in pharmacies of unqualified assistants, which was described as an element of danger—not for the apothecaries only; and a resolution submitted by the circles of Schwaben and Neuburg in reference to quackery. This was of some general interest. It was stated that the apothekers of those districts have had frequent experience of late years of travelling agents representing unqualified medicine-mongers, besides advertisements offering medical advice and assistance to the public, and offering their compounds through an apothecary who acts as agent for them. The stuff they send is generally very dear, and in order to keep clear of legal difficulties is usually composed of obsolete and worthless remedies. These circles had therefore drawn up a resolution in the following terms:—"The German Apotheker-Verein regards the support of quackery by apothekers as a disgrace and a professional injury, and resolves that those members through whose co-operation the existence of quacks is rendered possible shall be excluded from the Verein and their names published in the society's official organ." This was a little too sweeping and was not carried. There was also a proposal from the circle of Schneider-Sprottau that the Verein should undertake the publication of a commentary on the new Pharmacopœia. This was also rejected. A scheme for the formation of district councils of honour to settle disputes among the members had also been drawn up, but its adoption was postponed. Lastly, a vote was taken on the place of meeting for next year, when the choice fell on Wiesbaden.

The festivities in connection with the meeting had been arranged with lavish profusion by Dr. Schacht and his coadjutors. They comprised a theatrical performance and garden concert in the celebrated Kroll's establishment in the Königs-platz, and a dinner in the magnificent Winter Garden of the Central Hotel. In this spacious and gaily-decorated garden about 800 covers were served, a band playing during the dinner, which, interspersed with a few short speeches, lasted four hours; and to wind up, a concert, supper, and ball in the Zoological Garden, where the attendance could not have been much less than 1,000. This entertainment lasted from 4 P.M. to 2 A.M., when a special train carried the party back to Berlin.

The exhibition held in connection with the meeting was not so extensive as might have been expected, but everything shown was very good. Schering, of Berlin, and Merck, of Darmstadt, divided honours as far as fine chemicals were concerned. Each firm made a splendid display. Kathe, wholesale druggist, of Halle, occupied a large space with fine drugs, among which were roots, barks, and such like, cut up into small and regular diagonals, ready for sale or for pharmaceutical employment. We were informed that this work is done for the firm in the Halle penitentiary. Mr. Loefflund, of Stuttgart, had a splendid show of his malt extract, and malt and other preparations were also exhibited by the President, Dr. Brunnengraber. Zemsch, of Worms, whose drug-mill we illustrated in June, showed this and a great variety of other ingenious apparatus for pharmaceutical use. Jacoby, of Elberfeld, had on view a series of Seabury & Johnson's plasters, and Chesebrough's vaseline and preparations, for both of which products he seemed to be agent. Gelatine pearls were exhibited in considerable variety by many makers, but coated pills had not found their way. Chemical and physical apparatus and homœopathic medicines were prominent. Apotheker Stegemann, of Sondershausen, sent

a collection of books, all of the eighteenth century, on chemistry, pharmacy, or botany. Altogether there were 61 exhibitors.

## THE VETERINARY SURGEONS ACT— SEPTEMBER 27 THE LAST DAY FOR REGISTRATION.

WE may remind all whom it may concern that the last day for applying for registration as an existing practitioner is the 27th of this month. Intending applicants should apply at once to A. W. Hill, Esq., the Secretary of the Royal College of Veterinary Surgeons, 10 Red Lion Square, London, for the proper forms. These provide for a statutory declaration before a magistrate or justice of the peace, that the applicant has continuously practised veterinary surgery since August 27, 1876, and for testimonials to moral character and respectability from persons of known position. The application must be accompanied by a remittance of six guineas, either by post-office order payable at High Holborn, or by cheque, crossed "Sir Samuel Scott, Bart., & Co., London."

## ROYAL COMMISSION ON THE MEDICAL ACT.

THE evidence taken before this Commission has been published in a big folio blue-book of 400 pages. It contains only slight references to pharmaceutical politics, and every allusion thereto is introduced with an apologetic acknowledgment that the subject did not come within the scope of the Commission. So far as it goes the evidence is in favour of the continuance of limited counter practice, and this opinion was embodied in the "Report."

Many questions which have been discussed in pharmaceutical circles are dealt with in the evidence from the medical standpoint. Cram, curriculum, the efficiency of examinations, and the foibles of examiners, reporting Council proceedings, the sorrows of Council members and representation, besides the shortcomings of the General Medical Council in allowing assistant pharmacists to register as dentists, are all touched with more or less brilliance and brevity. Medical runs parallel in theory with pharmaceutical education, the same questions arise and need settlement. It may be stated at once that the opinion of nearly every witness who touched the question was strongly in favour of a compulsory curriculum. Sir James Paget admitted that practical examinations were so sure a test that the grinding or cram that enabled a man to pass really taught him his profession. Still he was strongly in favour of a curriculum. Nothing short of inherent perversity or dulness could then prevent a man learning as he went along. Theoretically the evidence of attendance at lectures was worth little, practically it was valuable.

Mr. William Stoker, F.R.C.S.I., a private teacher of medicine for 12 or 14 years, laid bare the secrets of the grinders' trade with delightful candour. His opinions on examiners were frankly expressed and refreshing. He has made it the business of his life to study the peculiarities of examiners. If one remains long in his position, his questions are studied very closely. There are very few good examiners, too few to allow a rapid rotation. Examiners benefit by experience, but students who go to the right place have a good chance of finding out their favourite questions and the answers they approve. Examiners differ much. One respected gentleman has 50 questions. He takes a section of the 50 at each examination, the written ones being used at the next  *viva-voce*  examination, and  *vice versa* . Another examiner has not repeated himself a dozen

times in the printed question-papers of 14 years; it is safe to exclude from attention every subject he has previously dealt with. It is almost impossible to avoid getting into a special style of question.

Fraudulent wasted ingenuity is well illustrated in a case mentioned by Dr. E. Waters. A man who signs himself "Analytical and Consulting Chemist" lives on the first-floor in certain London buildings. He gives advice and supplies medicine, charging a guinea for the latter and 2*l.* for the advice. One patient afflicted with incurable cancer of the mouth has been persuaded that it is merely a poisoning of the blood. He travels from Cheshire to London and pays these extortionate fees. The title this person assumes quite evades the Medical Act, and almost evades the Pharmacy Act.

The other matters we have mentioned above are dealt with too briefly for repetition here.

### RATHER TALL.

WE have received a report of the first annual session of the Virginia State Pharmaceutical Association held at Richmond. Proceedings were commenced by "a feeling and appropriate prayer" from the Rev. Moses D. Hoge, D.D. Then Colonel Carrington, Mayor of Richmond, mounted the rostrum. His eloquence began at boiling-point thus:—

The sick eye brightens and the gloomy heart bounds with joy, as doubting humanity finds true science closing her hands to grasp her treasures, and looking her golden arms about her ramparts to build a wall of exclusion against interloping quacks and impostors. Human life is no plaything, to be toyed with by the effrontery of ignorance or perilled in the heartless clutches of avarice and presumption. I intend no sacrilege to Divine writ in quoting, that the Scripture has declared: "Paul may plant and Apollon water, but God alone giveth the increase," to model upon it the maxim which, with equal force, applies to your profession: "The skilled physician may correctly diagnose and prescribe, the obedient patient may lend the aid of following his advice, but the learned and accurate pharmacist alone has the compounding of the remedy which makes drooping Nature shake off the shackles that prostrate her form."

And he kept up this style right through. We quote another gem of this gallant gentleman's flattery to show the dignity of pharmacy in the eyes of the Mayor of Richmond:—

Gentlemen: you stand as a fortress of protection against the "ills that flesh is heir to," and you should band together with those strong bonds that all noble brotherhoods should hold. You stand behind and above the medical profession, just as an appellate court stands behind the weakness and errors of its court of first resort; for you have to correct the errors in the proportion of remedies prescribed, as well as other inaccuracies. You stand as the officer of the court of conscience and of learning to execute its decrees, for the physician directs the sentence to be executed on disease, and leaves the fulfilment of his order to you. Many a life has been saved by your superior knowledge of the proper component parts of a compound; many a lingering hour has been spared the bed of pain by you rectifying the errors of careless or unlearned physicians.

**IODOFORM IN TOOTHACHE.**—Schaff, in the *Deutsch. Med. Zeit.*, No. 12, recommends iodoform, on account of its gently caustic action, as an anodyne application to exposed tooth-nerves. The circumstance that a single or repeated application of iodoform does not produce any irritation, much less any inflammation of the periosteum, and the double function of the remedy as a cleansing and disinfecting agent, make it especially appropriate as a caustic, particularly before the introduction of a temporary filling. The author uses a paste consisting of—

Iodoform, powdered	..	..	..	..	60 grs.
Kaolin	..	..	..	..	60 "
Carbolic acid	..	..	..	..	8 "
Glycerin	..	..	..	..	q.s.
Oil of peppermint	..	..	..	..	10 gtt.

Triturate the iodoform, kaolin, and oil of peppermint with enough glycerine to form a thick paste.—*Medical Times and Gazette.*



AND

### Literary Notes.

#### *A Practical Treatise on the Fabrication of Volatile and Fat Varnishes, Lacquers, Siccatives, and Sealing-waxes.*

From the German of Erwin Andres, Manufacturer of Varnishes and Lacquers. With Additions on the Manufacture and Application of Varnishes, Stains for Wood, Horn, Ivory, Bone, and Leather. From the German of Dr. Emil Winckler and Louis E. Andés. The whole Translated and Edited by William T. Branut, Graduate of the Royal Agricultural College of Eldina, Prussia. Illustrated. Philadelphia: C. Baird & Co. London: Sampson Low & Co. 1882. 8vo., pp. 346.

THE very full title-page quoted above is sufficiently descriptive of the work before us. The information it contains is not attainable from other sources, and to those who have or can cultivate a trade in varnishes it will prove invaluable.

No. 6 of Thos. Christy's "New Commercial Plants" is remarkable as a specimen of the result of the utilisation of fresh vegetable fibres, and contains an article equally remarkable, giving information needed for extending this enterprise. The number is printed entirely on paper prepared from wood converted into pulp by the Ekman process. It contains six coloured lithographs of the microscopic appearances of 18 fibres. This article fills 52 pages. It is followed by very useful and interesting notes on plants and drugs recently introduced and now establishing themselves in the *materia technica et medica*.

"Harvey on Plant for the Manufacture of Iodine."—This is a paper read before the Institution of Civil Engineers by the author, who is part proprietor of one of the Chilian iodine works. The iodine exists in caliche in the form of iodate. The mother liquors from which the element is obtained contain about 22 per cent. of sodium iodate. The liquor is mixed with solution of acid sulphite of sodium, which precipitates the iodine. This is purified by sublimation. The exported article contains 6 to 10 per cent. of non-volatile matter, and about 10 per cent. of water. The acid sulphite is made in two steps from the native sodium nitrate. This salt is burnt with coal dust, the crude carbonate lixiviated and charged with the fumes of burning sulphur driven from a furnace through perforated pipes placed in the solution. During the months of October and November, 1881, the author exported from Iquique 7,560 lbs. of sublimed iodine. Scale drawings of the plant are given.

### PUBLICATIONS RECEIVED.

FROM the Smithsonian Institution: "List of Foreign Correspondents, Corrected to January, 1882." Washington: April, 1882. One hundred and sixty-five pages, giving the names of societies, individuals, and publications in correspondence with the institution, classified according to geographical habitat.

"Dispensing and Retail Price-list, recommended by the Committee of the Registered Chemists' Trade Association of Liverpool." Fifth edition, revised and improved, 1882. A book of 50 pages, printed on ruled writing-paper, with abundant margins for additions. The first edition appeared only in 1875; this is the fifth—the best proof that the list is really useful. It is sold at 1*s.*, and can be had of the Secretary, Mr. J. Hocken, 31 Old Hall Street, Liverpool.



## Medical Gleanings.

### COMMISSIONS ON CORPSES.

THE *Standard* of August 21 published a letter received by "an eminent London physician" from an undertaker in the west-end of London. The latter, who headed his communication with a coat of arms, and the satisfactory motto, "*Cui debet fidus*," and the words "Private and Confidential," proposes to the eminent physician that in any case when he may have an opportunity of introducing the undertaker's name (and he somewhat rudely hints that the opportunity must frequently occur) he will give a commission of 5 per cent. on a 5*l.* order, 10 per cent. on a 10*l.* order, 20 per cent. on a 20*l.* order, "and so on in proportion," he adds, though probably the arithmetical result of that proportion when the orders should reach 100*l.* did not present itself to the coffin-man's mind. This particular eminent physician did not yield to the temptation. It would be interesting to know how many have accepted the proposal. Those doctors who are willing to accept a commission from chemists on medicines supplied would probably submit to a further supplement to their income from the undertaker. The step from the contemptible to the revolting is not far.

ANGLO-AMERICAN MEDICAL SOCIETY OF PARIS.—The English and American physicians resident in Paris have recently formed an association under the above name. The President for 1882 was Sir John Rose Cormack, who died recently; the Vice-President is Dr. Bishop.—*Drug. Circular.*

GELSEMIUM AN ANTIPRURITIC.—Dr. Bulkley (*Buffalo M. and S. Journ.*) says that tincture of gelsemium administered internally, 10 drops every two hours, gradually increased to one or two drachms, will relieve the persistent itching in many skin diseases.

DR. EMMERT says that hydriodate of hyoscin prepared by Ladenberg has been found to produce a far more rapid mydriatic effect than even atropine. The solution dropped in the eye must not be stronger than .5 per cent., as 1.5 per cent. has caused symptoms of general poisoning.

GALEN'S WORKS.—Some important "medical gleaning" seems to have been effected at Salonica. According to the *British Medical Journal* the works of the celebrated physician, Galen, which were supposed to have been lost, have been discovered there by M. Papageorges. They are in manuscript; date from the fifteenth century, and appear to have originally formed 248 sheets; 144 are in good condition, 24 are mutilated or worm-eaten, and 80 are missing.

TREATMENT OF EPILEPSY.—We referred last month (p. 289) to the proposal of the authorities of a German epileptic hospital to provide patients with information as to the treatment ascertained to have been best for these cases, in order to protect them from quacks. The *Pharm. Zeitung* has obtained the following further information from the managers of the hospital:—No panacea, such as secret-medicine vendors proclaim, exists, and if a secret remedy procures a cessation of the fits this is due to the simple diet always prescribed with them, which is in accordance with that ordered by the hospital. In the hospital the best results have been obtained by the protracted use of absolutely pure potassium bromide, which quiets the nerves without deranging the stomach, even after taking it for years. It is chiefly important to ascertain the dose required by each patient, which must be determined in each individual case. Although the experience of the hospital is comparatively too recent to enable physicians to positively assert that this treatment can effect an absolute cure, the results attained show that the number of fits is really reduced by its means, that it prevents a lapse into idiocy, and in a number of cases has recalled the lost mental powers. In fresh cases a perfect cure is more than probable, and the hospital can record 50 of the kind where no fit has occurred for years. A regular employment and, wholesome, moderate, and plain diet must be strictly observed.

### MISCELLANEOUS FORMULÆ.

CEMENT FOR GLASS ARTICLES.—Dissolve 30 grains of caoutchouc cut small in 4 oz. (by weight) chloroform, and add 1 oz. mastich in fine powder, setting aside in the cold until the mastich has perfectly dissolved

SMOKERS' ESSENCE.—Correspondents of the *Pharm. Zeitung* contribute the following formulæ:—

#### I.

Digest 8 oz. orris root in 64 oz. spirit of wine. Set aside for 8 days. Separately dissolve in 10 oz. spirit of wine 70 drops ess. lemon, 60 drops otto of rose, 70 drops oil neroli, 2 drops raspberry ether, and add 4 grains musk.

Set aside for eight days. Mix the solutions, dissolve 2 lbs. finest gum benzoin, and filter.

#### II.

	Parts
Ol. menth. pip. . . . .	2
Ol. myristice . . . . .	2
Ol. origani . . . . .	2
Ess. limonis . . . . .	3
Ol. melisse . . . . .	3
Ol. rosmarini . . . . .	6
Tinct. vanille . . . . .	10
Ess. rosarum . . . . .	50
Ess. flor. aurant. . . . .	50
Tinct. benzoës . . . . .	60
Sp. vini rect. (90 per cent.) . . . . .	400

#### III.

	Parts
Ol. carui . . . . .	4
Ol. origani . . . . .	4
Acid. benzo'c. . . . .	15
Ol. bergamotte . . . . .	60
Sp. vini rect. (90 per cent.) . . . . .	500

TO PERFUME NOTE-PAPER.—Get a few quires of blotting-paper and sprinkle the sheets with the perfume desired; then put them under a weight until they become dry. When dry put note-paper, envelopes, &c. between the sheets, and place them under a weight for a few hours; when removed they will be found perfumed. The blotting-sheets may be utilised again, and can be made to retain their perfume for a long time by keeping them free from exposure to air.—*Stationer.*

TO KILL LICE ON PLANTS.—Professor Glaser recommends the following in a German journal:—Dissolve 2 oz. soft soap in half-pint of rain water; make an infusion of 1½ oz. tobacco in half-pint water; mix together; add 2½ oz. fusel oil, and half-pint of methylated spirit, and make up the mixture to a quart. Sprinkle the leaves of infected trees with it, and it will kill the lice without injuring the plants.

MUSK PERFUME.—A most delicious musk perfume can be made by the following formula:—

Concentrated ext. of jasmine . . . . .	½ gallon
Tincture of tolu balsam . . . . .	1 oz.
Oil of otto of roses . . . . .	15 drops
Tinct. of musk . . . . .	12 oz.

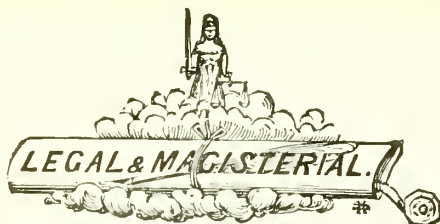
*Weekly Drug News.*

WARTS.—Dr. Unna has cured warts by applying unguentum cinereum with 5 to 10 per cent. of arsenic. The juice of the pawpaw seems to be used with success against them.

ARTIFICIAL HUNYADI JANOS WATER.—The subjoined formula is based on an analysis by Liebig. It is three times the strength of the natural product:—

Magnesium sulphate . . . . .	519.92 grains
Sodium sulphate . . . . .	519.54 "
Potassium sulphate . . . . .	2.76 "
Sodium chloride . . . . .	39.15 "
Sodium bicarbonate . . . . .	15.60 "
Water . . . . .	16 oz.

Dose, 2 oz. and upwards.



## ANALYTICAL CLAIMS.

IN the Lord Mayor's Court on August 24 before Sir T. Charley, Q.C., M.P., Common Serjeant, Messrs. Neison & Payne, analytical chemists, of Philpot Lane, sought to recover the sum of 13 guineas from Mr. Sim, proprietor of the East London Aquarium. It was set forth that some months ago the defendant had a favourite lioness, which died under suspicious circumstances; and, it being supposed that it was poisoned by a vindictive servant employed at the Aquarium, the plaintiffs were instructed to make a post-mortem examination. This operation lasted several days, and for the series of tests, and report thereon, the plaintiffs charged seven guineas. They were subsequently called as witnesses before the magistrate at Worship Street Police Court, where the suspected servant was charged with having poisoned the animal; but, after two adjournments, the case was dismissed, on the evidence of the plaintiffs that no poison could be traced. For these three attendances, plaintiffs charged six guineas, making up the amount claimed. For the defence, it was contended that a medical witness could only charge half a guinea a day for attendance at a police court, in the absence of a special arrangement, and also that the plaintiffs had agreed to make the analysis for a guinea. The learned judge ruled in favour of the defence as to the half guinea taxed charge for witnesses' attendance at the police court. Five guineas had been paid into court by the defendant, but the jury returned a verdict for the plaintiffs for 8*l.* 18*s.* 6*d.*

## AERATED-WATER BOTTLES.

IN the case of "Allen v. Richards," on August 15, a motion was made by the plaintiff, a vendor and manufacturer of mineral and aerated waters, for an interim injunction to restrain the defendant, a keeper of a beer-shop, from selling ginger-beer not manufactured by the plaintiff in bottles stamped or marked with the plaintiff's name or registered trade-mark. The bottles in question were bought at second-hand by the defendant, who filled them with his own ginger-beer and labelled them with an adhesive label bearing his own name. The defendant contended that the plaintiff had parted with the whole property in the bottles, and also denied any fraudulent user. The plaintiff relied on the decision of Vice-Chancellor Malins in a similar case: "Rose v. Loftus." Mr. Justice North said that if the defendant chose to buy second-hand bottles bearing a trade name and filled them with the same liquid as the owner of the name was in the habit of filling them with, the defendant was not in a position to resist an injunction if applied for. The affixing of the defendant's own label did not affect the question, for the label might get removed in a variety of likely ways—for instance, if the bottle were plunged in ice. If the label under such circumstances were to come off, there would be nothing to prevent the public from believing that they were purchasing, in the bottles stamped with the plaintiff's name, ginger-beer manufactured by the plaintiff. The injunction must, therefore, be granted.

## THEFT OF CHEMICALS.

At the Guildhall, on August 24, Arthur Schmitz, a junior assistant with a salary of 2*l.* a week in the essential-oil department at Messrs. Burgoyne, Burbidges & Co's. warehouse, was charged with stealing 25*oz.* of nitrate of silver, the property of his masters. David Hunter, described as a traveller, of 31 Forston Street, Shepherdess Walk, was charged with receiving the same knowing it to have been stolen. Detectives had been watching the pair for some

time, and caught them apparently in the act of transferring the silver from one to the other. Quantities of drugs and essences were found at Hunter's lodgings, and the case was adjourned to discover the owners.

## PROSECUTION FOR THE MANUFACTURE OF ARTIFICIAL FRUIT ESSENCES WITHOUT A LICENCE.

ON August 15, at Lambeth Police Court, Mr. William John Bush, wholesale chemist, at Artillery Lane, City, and Ash Grove, Hackney, appeared to summonses issued against him by the Inland Revenue for baving, it was alleged, committed various offences against the Excise laws. The first charge was one of distilling methylated spirits, the Excise authorities contending that this was a distillation of spirits within the meaning of the Act. The next was that of acting as a compounder of spirits, and of selling compounded spirits without a licence. This was grounded on the manufacture of artificial essences of brandy, gin, port wine, and Curaçao. For the defence it was contended that the essences were not spirits within the meaning of the Act, and that the business had been carried on for many years without disturbance. A prize medal was awarded for the essences at the exhibition in 1851. Mr. Chance, the stipendiary, reserved his decision.

## FORMULÆ OF SECRET MEDICINES.

*The Formulæ given below are translated (by special permission of the author) from a German collection compiled by Mr. Edward Hahn, Apotheker. The names following most of the Formulæ are those of the authorities quoted for the analysis. The weights are almost invariably given in metric denominations. A gramme is equivalent to 15½ grains. The prices quoted are the nearest English equivalents to the original retail price.*

[g. = grammes; p. = parts.]

**ZAHNAMALGAM**—DENTAL AMALGAM, for filling hollow teeth.—Mercury 69, copper 31 per cent.—*F. L. Bley.*

**ZAHNBALSAM**—TOOTH-BALSAM (Hoffmann, Munich), for the immediate relief of the severest toothache. Catechu 1 p., extracted by means of alcohol 3 p., and the resulting tincture mixed with a fourth or a fifth of its weight of clove-oil. 4 g., 1*s.*—*Rottmann.*

**ZAHN CIGARETTEN**—DENTAL CIGARETTES (J. v. Török, Pesth), for toothache. Cylinders, 9 centimetres long and as thick as a quill, made from a piece of chamois-coloured paper 7.75 centimetres broad, saturated with tincture of storax or benzoin and a little nitre. 8 cylinders in a paper case, 2*s.*

**ELECTROMOTORISCHE ZAHNHALSÄNDER**—ELECTROMOTOR DENTAL COLLAR (Gehrig Brothers, Berlin) are velvet ribbons, lined with yellow calico, spread with sulphur. 1*s.* each.—*Hager.*

—(W. Zeble, Berlin).—A narrow strip of shirting, coated with sulphur by the aid of paste, and stitched inside a ribbon of black velvet. It is 13 millimetres broad and 22.5 centimetres long, furnished at each end with a black string.—*Hager.*

**ZAHNKISSEN**—TEETHING-PILLOWS (Dr. Heim), for babies, for facilitating teething. Small cushions filled with the herb of greater centaury, orris-root, and a little musk.

**ZAHNKITT**—DENTAL CEMENT (Lallemand).—A mixture of zinc oxide and saturated solution of zinc chloride.

—(Ostermaier).—A mixture of powdered quicklime 7, and glacial phosphoric acid 6.

—(Sorel, Paris) is basic zinc oxy-chloride.

**AROMATISCHE ZAHNPASTA**—AROMATIC TOOTH-PASTE (Dr. Suin de Boutemard, Rheinsberg, made by Raymond & Co., Berlin).—Oil soap, 62.5; starch powder, 6.5; drop-lake, 17.4; chalk, 7.35; calcium sulphate, .95; pumice-stone, 6.2, with a trace of peppermint oil. 24 g., 7*d.*—*Wittstein.*

**AROMATISCHES ZAHNPULVER**—AROMATIC DENTIFRICE (Dr. Johnson).—Chalk, alum, orris-root, cochineal, and clove-oil.



**ZAHNSCHMERZSTILLENDEN ZAHN-MUNDWASSER—TOOTH AND MOUTH WASH FOR TOOTHACHE** (E. Hückstädt, Berlin).—Originally consisted of ether, 16; clove oil, 3; cajuput oil, 1. 4 g., 6d.—*Hager*. More recently it has been found to be a solution of camphor 1 g., in ether 2 g., with clove oil 18 drops.—*Schädler*.

**ZAHNPASTA—TOOTH-PASTE** (A. H. A. Bergmann, Waldheim, in Saxony).—Fine oil-soap 50, and white sugar 25, are dissolved in spirit (containing 40 per cent. alcohol) by the aid of a gentle heat. A little peppermint oil and aniline red are added, and the whole poured into suitable moulds. 30 g., 5d.—*Wittstein*.

—(Pfeffermann, Vienna).—Prepared chalk, 60; oyster-shells, 26; Florentine lac, 6; peppermint oil, 3; reduced to a suitable consistence by the aid of sufficient tragacanth mucilage. 50 g., 2s. 6d.—*Hildevin*.



[The following list has been compiled expressly for THE CHEMIST AND DRUGGIST by G. F. Redfern, Patent Agent, 4 South Street, Finsbury, London, and at Paris and Brussels.]

Applications for Letters Patent :—

- Alum, &c.**—No. 3835.—P. Spence and F. M. Spence, both of Manchester, manufacturing chemists. Improvements in the manufacture of alum and other salts of alumina. Dated August 11, 1882.
- Ammonia.**—No. 3643.—A. Feldmann, Doctor of Philosophy, of Bremen, Germany. Improvements in the manufacture of ammonia and in apparatus therefor. Dated August 1, 1882.
- Ammonia, &c.**—No. 3977.—D. Urquhart, of 4 The Sanctuary, Westminster, London.—Partly a communication from Dr. L. Playfair, of New York, United States. Improvements in the manufacture of ammonia and in the purification of shale oils. Dated August 19, 1882.
- Ammonia, &c.**—No. 4057.—E. P. Alexander.—A communication from H. Y. Castner, and F. B. Castner, both of New York, United States. Improvements in the manufacture of ammonia and bone-black, and in apparatus or means employed therein. Dated August 24, 1882.
- Bleaching.**—No. 3740.—J. C. Mewburn.—A communication from J. Verduynde-Degraeve, of Bruges, Belgium. A new chemical product for bleaching or decolorising. Dated August 5, 1882.
- Bleaching.**—No. 3904.—C. Toppan, of Salem, Massachusetts, United States. Improvements in the art or process of bleaching. (Complete specification.) Dated August 15, 1882.
- Bottles, &c.**—No. 3854.—J. Ferguson, of Ashton Keynes, Wiltshire. Improvements in bottles for containing aerated waters and the like, and in stoppers for the same. Dated August 12, 1882.
- Bottles, &c.**—No. 4032.—T. Pyke, of South Shields, Durham. Improvements in the manufacture of glass bottles and bottles and apparatus or tools therefor. Dated August 22, 1882.
- Caustic Soda.**—No. 3577.—A. J. Boulton.—A communication from H. Herberts, of Barmen, Germany, chemical manufacturer. Improvements in the manufacture of caustic soda and caustic potash, and in apparatus therefor. Dated July 27, 1882.
- Chemicals.**—No. 3509.—J. W. Kynaston, of Liverpool, manufacturing chemist. Improvements in the manufacture of certain chemicals, and in their purification from iron. Dated August 10, 1882.
- Cleaning Intestines.**—No. 3697.—E. de Pass.—A communication from S. Oppenheimer, of New York, United States. Improvements in machines for cleaning intestines. Dated August 3, 1882.
- Colouring-matter.**—No. 4048.—F. Wirth.—A communication from E. Oebler, of Offenbach-on-the-Main, Germany. Improvements in the manufacture of a blue colouring matter or dye stuff. Dated August 23, 1882.
- Dental-plates, &c.**—No. 3750.—J. H. Gartrell, of Penzance, Cornwall. Improvements in apparatus for the manufacture of dental-plates or other articles of celluloid, indiarubber, or the like. Dated August 5, 1882.
- Deodorising and Purifying Human Excreta, &c.**—No. 3863.—R. Nicholls, of 2 Purlbrook Road, Victoria Road, Hendon, Middlesex, electrical cloth manufacturer.—Improvements in the method of and means and apparatus for effectually deodorising and purifying human excreta, and rendering same specially valuable for manurial and fertilising purposes. Dated August 12, 1882.

**Disinfectants, &c.**—No. 3917.—C. Lowe and J. Gill, both of Manchester, manufacturing chemists. Improvements in the manufacture of compounds employed for disinfecting purposes, and for washing, dipping, cleansing, and dressing sheep, cattle, horses, dogs, or other animals, and for killing or preventing attacks by parasites thereon. Dated August 16, 1882.

**Distilling Tar, &c.**—No. 3640.—W. Maxwell, of Gartsherrie, Lanarkshire, North Britain. Improvements in the distillation of tar and other liquids. Dated August 1, 1882.

**Evaporating Liquids, &c.**—No. 3793.—H. Gardner.—A communication from F. B. Nichols and C. Thomson, both of Halifax, Nova Scotia, Canada. Improvements in apparatus for evaporating or concentrating liquids, and for saturating liquids with gases. Dated August 3, 1882.

**Filtering, &c.**—No. 4108.—C. F. Claus, of Mark Lane, London, chemist. Improvements in the preparation and in the use of porous siliceous materials for filtering acid and other liquids, filling acid-condensers, and for similar purposes. Dated August 28, 1882.

**Filter.**—No. 4072.—J. F. C. Farquhar and W. Oldham, both of 24 Long Acre, London. Improvements in filtering-apparatus. Dated August 25, 1882.

**Filters.**—No. 4028.—E. Perrett, of Victoria Chambers, Westminster, London, civil engineer. Improvements in filters and in the mode of and apparatus for cleansing the same. Dated August 22, 1882.

**Hydrate of Glucose.**—No. 4017.—H. J. Haddon.—A communication from L. Virneisel, of Milttenberg-on-the-Main, Germany. A new or improved process for the manufacture of hydrate of glucose from starch. Dated August 22, 1882.

**Ice.**—No. 3703.—T. Watts, of Newport, Isle of Wight, and W. A. Gorman, of Mason Street, Westminster Bridge Road, London. Improvements in apparatus for making ice. Dated August 3, 1882.

**Ink, &c.**—No. 4106.—C. F. Claus, of Mark Lane, London, chemist. Improvements in the manufacture of printing-ink, and of black and other pigments or paints. Dated August 28, 1882.

**Medical Battery.**—No. 3443.—W. R. Warren.—A communication from G. M. Hopkins, of Brooklyn, New York, United States. An improved medical battery. (Complete specification.) Dated July 29, 1882.

**Methylquinoline.**—No. 3541.—J. Erskine.—A communication from Farbwerke vorm. Meister, Lucius, and Brüning, of Hoechst-am-Main, Germany. Improvements in the production of methylquinoline from ortho-nitro-benzylidenacetone. Dated July 26, 1882.

**Obtaining Carbonate of Strontia.**—No. 3669.—D. Sidersky and H. Probst, of Rositz, Germany. An improved process and apparatus for obtaining carbonate of strontia from the residues in the manufacture of sugar. Dated July 29, 1882.

**Obtaining Products from Combustible Gases.**—No. 3610.—J. Alexander and A. K. McCosh, both of Gartsherrie Ironworks, Lanarkshire, North Britain. Improvements in apparatus for obtaining products from blast-furnace and other combustible gases. Dated July 31, 1882.

**Obtaining Products of Dry Destructive Distillation.**—No. 3646.—G. F. Redfern.—A communication from H. Wurtz, of New York, United States. Improvements in apparatus for obtaining products of dry destructive distillation from solid matters. Dated August 1, 1882.

**Obtaining Sulphur.**—No. 3608.—C. F. Claus, of Mark Lane, London, chemist. Improved processes for obtaining sulphur from sulphide of hydrogen. Dated July 29, 1882.

**Opening Bottles.**—No. 4083.—D. Cole, of Swindon, Wiltshire. Improvements in apparatus for opening bottles containing aerated liquids. Dated August 26, 1882.

**Oxidising Alcohols, &c.**—No. 3789.—E. A. Brydges.—A communication from D. Sandmann, of Charlottenburg, Prussia, Germany.—Improvements in oxidising alcohols and other similar matter or fluids, which said improvements can be employed for producing concentrated acetic acid. Dated August 9, 1882.

**Pigments, &c.**—No. 4107.—C. F. Claus, of Mark Lane, London, chemist.—Improvements in the manufacture of white pigments, alkalies, and alkaline substances. Dated August 28, 1882.

**Preserving Meat, &c.**—No. 4051.—W. H. Northcott, of Hatcham Ironworks, Pomeroy Street, New Cross, London.—Improvements in machinery, apparatus, and processes for preserving meat, making ice, and for refrigeration generally. Dated August 24, 1882.

**Purifying Coal-gas.**—No. 3639.—J. Walker, of 10 Elmdon Place, Leeds, Yorkshire.—Improvements in purifying coal-gas. Dated August 1, 1882.

**Rinsing, &c., Strontium Saccharate, &c.**—No. 3601.—G. W. von Nawrocki.—A communication from the "Zeitzer Eisengießerei und Maschinenbau-Aktien-Gesellschaft," of Zeitz, Germany. Improvements in continuously acting apparatus for rinsing, washing, and separating strontium saccharate, and other materials, also applicable for separating soluble or insoluble particles from other bodies. Dated July 29, 1882.

**Recovering Caustic Soda.**—No. 3999.—G. Johnson.—A communication from T. Gibb, of Elizabeth, New Jersey, United States.—Improvements in the recovery of caustic soda or potash employed for the extraction of arsenic from copper precipitates. Dated August 21, 1882.

**Setting Colours.**—No. 3695.—C. Toppan, of Salem, Massachusetts, United States. Improvements in the art or process of setting and intensifying the colours of dyed or printed fabrics. (Complete specification.) Dated August 15, 1882.

**Soap.**—No. 3994.—A. Hedley, of Mayfield, Gosforth, Northumberland, soap manufacturer. Improvements in the manufacture of mottled soap. Dated August 21, 1882.

**Solid Cumidine, &c.**—No. 3997.—C. D. Abel.—A communication from the Aetien Gesellschaft für Anilin Fabrikation, an incorporated company, of Berlin, Germany. Improvements in the manufacture of solid cumidine, and the production therefrom of diazocumole and the sulpho acids of diazocumole for use in the preparation of azo colours. Dated August 21, 1882.

**Starch Substitute, &c.**—No. 3910.—R. Edwards, of Liverpool. An improved article of commerce, applicable for use in the arts as a substitute for starch or pearl-hardening, or where an impalpable mineral powder is required, and process of manufacturing the same. Dated August 16, 1882.

**Stopping Bottles**—No. 3732.—H. Shaw, of Aston, near Birmingham, mechanical engineer. New or improved fastenings for preventing the removal of stoppers and corks from bottles and stoppers or covers from other vessels. Dated August 5, 1882.

**Stopping Bottles.**—No. 4024.—I. Lippmann, of Berlin, Germany. Improvements in bottle-stoppers. Dated August 22, 1882.

**Stopping Bottles.**—No. 4307.—H. J. Haddan.—A communication from G. A. Hardt, of Cologne, Germany. Improvements in stoppers or covers for bottles, cans, and similar receptacles. Dated August 23, 1882.

**Stopping Bottles, &c.**—No. 3670.—T. Brooke and J. Brooke, both of Sheffield, Yorkshire. Improvements in stoppering bottles, jars, flasks, and other similar vessels. Dated August 2, 1882.

**Sulphites, &c.**—No. 3773.—J. Murray.—A communication from F. C. Kudelski, of La Vendée, France. Improvements in the manufacture of sulphites and bisulphites for bleaching purposes. Dated August 8, 1882.

**Sulpho Acids.**—No. 3724.—F. Wirth.—A communication from the "Farbfabrik vormals Brünner," of Frankfurt-on-the-Main, Germany.—An improved manufacture of certain sulpho acids, and of colouring matters therefrom. Dated August 4, 1882.

**Sulphurous Anhydride.**—No. 3714.—S. Pitt.—A communication from the Compagnie Industrielle des procédés Raoul Pictet, of Paris, France. Improvements in the manufacture of sulphurous anhydride. Dated August 4, 1882.

**Surgical Supports.**—No. 3516.—H. Hides.—A communication from E. Porten, of Antwerp, Belgium.—Improvements in and relating to the construction of surgical supports, splints, or spinal or other bed-rests; to serve also as a litter or ambulance for wounded and sick patients. Dated July 25, 1882.

**Treating Sewage.**—No. 3562.—J. Young, of Kelly, Renfrewshire, North Britain.—Improvements in the treatment of sewage. Dated July 27, 1882.

**Treating Solutions.**—No. 3853.—D. Watson, of Manchester, metallurgist. Improvements in processes for treating solutions used for purifying copper ores and precipitate. Dated August 12, 1882.

**Vaporising, &c.**—No. 3725.—E. J. C. Fear, of Hampton Park, Redland, near Bristol, Somersetshire. New or improved apparatus for use for purposes of vaporising, refrigerating, or heating and application of heated, refrigerated, scented, or medicated vapours or sprays. Dated August 4, 1882.

Specifications published during the month:—

Postage 1d. each extra.

(1881.)

5448. W. T. Morgau. Manufacture of sensitive paper, &c. (Not proceeded with.) 2d.

5453. H. W. L. O. Von Roden. Preserving milk. 2d.

5470. C. Mauris. Galvanic batteries. (Not proceeded with.) 2d.

5472. N. Fritzner. Mechanical stoppers for bottles containing aerated waters. 6d.

5486. A. A. Hely. Reproduction or production of copies of pictures, &c. 4d.

5489. F. Wirth. Bottles for facilitating the counting of drops of liquid discharged therefrom. 6d.

5507. H. Gardner. Treatment of ingredients as substitute for coffee. (Not proceeded with.) 2d.

5509. F. S. S. Darby. Bottles and stoppers for same. (Not proceeded with.) 2d.

5514. J. Simpson and E. W. Parnell. Treating alkaline lime-mud. 6d.

5698. J. C. Mewburn. Preparing soap. (Not proceeded with.) 2d.

5713. C. W. Lightoller and J. Longshaw. Treatment of yarn and other cotton goods. 6d.

5715. W. R. Lake. Cocks or taps for apparatus for compressing or rarefying air. 6d.

5745. F. H. Atkins and W. G. Atkins. Apparatus for softening, purifying, and filtering water. 6d.

1882.

25. G. Payne. Manufacturing soap. 2d.

28. J. W. Wood. Treating figs for the production of a beverage therefrom. 2d.

51. C. Weygang. Manufacture of artificial parchment, &c. 4d.

59. H. J. Haddan. Candles. 2d.

103. A. and J. Jacobs. Bottles for containing aerated liquors, &c. 6d.

109. W. Weldon. Manufacture of soda, &c. 4d.

125. H. H. Fanshawe and A. J. T. Wild. Bottles, &c. (Not proceeded with.) 2d.

132. E. Edwards. Manufacture of manure from the waste from distillers. (Not proceeded with.) 2d.

151. C. J. Leclerc. Cork-branding machines. 6d.

156. D. Perry. Treatment of certain mineral phosphates to obtain useful products therefrom. 4d.

167. J. Allan. Dyeing and colouring felt, jute, &c. 8d.

192. J. M. Cameron. Ochre pigments. 2d.

196. E. G. Brewer. Manufacture of wine from beetroot. 4d.

202. A. MacDonal. Treating solutions containing compounds of ammonia. 4d.

203. G. Payne. Distillation of glycerine. 6d.

211. C. J. Mountford. Fire-proof paint. 2d.

212. K. F. C. Petersen. Machine for corking bottles. 6d.

220. F. W. Cottrell. Material to form artificial ivory, &c. 4d.

236. W. R. Lake. Treatment of maize for an article of diet. 4d.

248. W. A. Barlow. Inhalation-chambers. 4d.

278. W. A. Barlow. Effecting electro-hydro-therapeutic treatment of patients affected by disease. 6d.

288. J. Auchinclove. Bleaching and dyeing cotton, &c. 6d.

297. J. & A. J. Higgin. Galvanic batteries, &c. 6d.

299. S. Pitt. Utilisation of phosphatic metallic slags. 4d.

302. A. R. Bennett. Voltaic batteries. 4d.

311. H. Y. D. Scott. Treatment of phosphatic and nitrogenous substances for the manufacture of manure. 4d.

354. H. J. Haddan. Manufacture of acetic acid. (Not proceeded with.) 2d.

367. W. Windus. Manufacture of sulphuric acid. (Not proceeded with.) 2d.

375. C. D. Abel. Manufacture of cattle food from brewers' grains. 6d.

381. E. G. Brewer. Disinfectants. (Not proceeded with.) 2d.

387. J. Walker. Purifying coal-gas. 4d.

388. J. M. Moss. Transferring designs to surfaces. 4d.

395. R. Schroer. Production of photographic copies on the surfaces of all matters. (Not proceeded with.) 2d.

410. G. Chapman. Separating oil or tar from blast-furnace gases. (Not proceeded with.) 2d.

440. G. Neilson. Abstracting ammonia from the gaseous products of combustion in furnaces. 6d.

444. F. A. Gatty. Dyeing cotton yarns, &c. 6d.

451. J. A. Dixon. Manufacture of colouring matters for dyeing and printing. 4d.

470. W. W. Richardson. Dyeing and printing, &c. 4d.

473. J. Brock. Utilising alkali waste. 2d.

665. H. A. Bonneville. Medical injecting or irrigating apparatus. 6d.

2160. A. M. Clark. Bottle-cleaner. 4d.

2168. G. Macanlay-Cruikshank. Filters. 6d.



#### LIQUIDATIONS.

CHRISPIN, WILLIAM, Dale Street, Ossett, chemist. August 21.

GRAYSON, CHARLES, 81 Trinity Street, Hull, chemist and druggist. September 5.

PRUST, THOMAS WILLIAM, 13 Market Street, Leeds, chemist and druggist. August 21.

SAVIDGE, WILLIAM MASON, Corby, chemist and druggist. August 21.

#### PARTNERSHIPS DISSOLVED.

OLDROYD, THOMAS, SONS, & CO., Waterloo Chemical Works, Waterloo Road, Hunslet, manufacturing chemists. August 1. (Christopher Oldroyd and Martin Houlden.) Debts by Oldroyd.

GATES & LAMBERT, Coburg Terrace, Anlaby Road, and Great Passage Street, Hull, chemists and druggists. July 1. (Henry Gates and Frederick Ernest Lambert.)



## Educational Information.

**F**EW pharmacists wish their sons to adopt their own occupation. There is a general impression that other professions are more profitable and that none are less desirable. The profession of medicine is the one that first attracts attention, then follows that of scientific chemistry in one of its many branches. The information given here is intended first as a convenient collection of information about the education of pharmacists, and next as a brief guide to the sources of education in medicine and science. It will be clearly understood that no one thinking seriously of the professions should rely exclusively on the details here given. The deans or secretaries of the various institutions will supply on application prospectuses and calendars giving much fuller information than we can find room for.

### PHARMACEUTICAL EDUCATION.

At present there is free trade in pharmaceutical education, that is to say, candidates for entrance into pharmacy may acquire their education where they choose. The sole condition attached to the profession or trade is that no one must keep open shop for the retail sale of poisons who is not registered as a chemist and druggist. To become a chemist and druggist the candidate must pass the Minor examination of the Pharmaceutical Society, and he must previously, by passing one of several examinations, give proof that he has acquired a fair general education. The detailed regulations of these examinations are given in the next section. At least nine-tenths of the candidates who present themselves have acquired part, at least, of their education at one of the pharmaceutical schools during an attendance of 3 to 12 months. There is considerable advantage in attending these institutions. The student is guided in his studies, difficulties are removed, and his progress is necessarily quicker than it could be by his own unaided efforts. But the student who wishes to reap the full benefit of his school career must go to it well prepared by previous application. The rudiments and something more of the two complex sciences, chemistry and botany, the details of the elaborate art of pharmacy have to be acquired by all who wish to pass the Minor examinations, and the student who attempts to do this in three, or six, or twelve months will do himself intellectual harm instead of good, unless he has cultivated by assiduous use his powers of seeing things—commonly denominated and rather obscured as “observation.” No one will succeed in pharmacy or any other occupation unless he can direct upon it sufficient energy to make it the most interesting of his surroundings. If a lad has *real* love for the study of science, the chemist’s shop is the best substitute for the scientific education that may be beyond his means. If he has no such tastes, and desires some occupation where he can make money and rise to affluence, let him avoid the chemists’ counter. If he is driven behind it by circumstances which allow him no escape, he will need strong motives to enable him to create an interest in his duties. Yet strong motives will enable him to do this, and he will find that steady resolve and endeavour will bear fruit, and make what seemed distasteful the steadiest delight of his life.

We should advise the candidate to pass the junior Oxford or Cambridge Local examination, including Latin and Arithmetic among his subjects, before leaving school. If in any way possible, he should also acquire there a practical knowledge of the elements of chemistry such as is required for the Cambridge Local examination, and a knowledge of shorthand and of the elements of botany would also be very useful. On becoming an apprentice he should register his certificate or pass the Preliminary examination. He should then take up botany as a pastime, collecting local plants and learning practically the methods of distinguishing and naming them, and the names and forms of their parts. In winter he may concern himself with making a collection of small specimens of drugs and chemicals, labelling each one with the particulars given in the Pharmacopœia, and endeavouring to make himself thoroughly familiar with them. Practical chemical analysis should be attended to at the same time. The exercises provided by our Students’ Column

would prove very helpful. He should join the local Association, and devour every technical and scientific periodical that falls in his way.

The examinations conducted under the direction of the Science and Art Department provide a definite aim for study, not so remote as the Minor examination, and the apprentice will find his time usefully occupied during the first year or two of his apprenticeship in preparing himself for the advanced examinations in chemistry and botany, and the elementary examinations in magnetism and electricity, and acoustics, light, and heat. A knowledge of the elements of other branches of science will be no disadvantage to him.

While dusting his bottles daily, the apprentice ought to become familiar with the appearance and smell of every liquid preparation in the shop. His daily work should give him a practical acquaintance with pharmacy, the reading of prescriptions, and dispensing.

The youthful pharmacist who occupies the first few years of his apprenticeship in this way will find very little difficulty in preparing himself for the Minor examination as he approaches the age of 21.

### PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

Candidates for the Minor examination must produce certificates of having attained the age of 21 years; and also to the effect that for three years they have been registered and employed as apprentices or students, or have otherwise for three years been practically engaged in the translation and dispensing of prescriptions. Women are admitted to all the examinations. The following are the

#### REGULATIONS OF THE BOARD OF EXAMINERS FOR THE EXAMINATION AND REGISTRATION OF PHARMACEUTICAL CHEMISTS, CHEMISTS AND DRUGGISTS, AND APPRENTICES OR STUDENTS.

In accordance with the Pharmacy Acts, 15 & 16 Vict. cap. 56; 31 & 32 Vict. cap. 121; and 32 & 33 Vict. cap. 117.

#### THE FIRST, OR PRELIMINARY, EXAMINATION.\*

(For Registration as “Apprentices” or “Students.”)

This examination is held at the following centres throughout Great Britain on the first Tuesdays in January, April, July, and October in every year:—Aberdeen, Birmingham, Brighton, Bristol, Cambridge, Canterbury, Cardiff, Carlisle, Carmarthen, Carnarvon, Cheltenham, Darlington, Douglas (Isle of Man), Dundee, Edinburgh, Exeter, Glasgow, Guernsey, Hull, Inverness, Jersey, Lancaster, Leeds, Lincoln, Liverpool, London, Manchester, Newcastle, Northampton, Norwich, Nottingham, Oxford, Peterborough, Sheffield, Shrewsbury, Southampton, Truro, Worcester, York. Candidates for this examination must give not less than fourteen clear days’ notice on a form which can be obtained of the Registrar.

The examination is a written one, and comprises:—

Latin.—Translation into English of a paragraph from the first book of *Cæsar* (“*De Bello Gallico*”). Latin Grammar.

English.—Grammar, Composition.

The first four rules of Arithmetic, Simple and Compound, Vulgar Fractions and Decimals, and a thorough knowledge of the British and Metrical Systems of Weights and Measures.

In the case of candidates residing in the country and unable to attend in London or Edinburgh, the Registrar shall send the questions, under seal, to the person appointed to superintend the writing of the answers, with instructions that they be opened by him in the presence of the candidates, who shall write the answers forthwith in his presence in a given time. The questions are prepared and reported upon by the College of Preceptors. Candidates must pay the fee before the first day of the month in which the examination is to be held.

\* Certificates of having passed the Local examinations of the Universities of Oxford, Cambridge, or Durham, the examination of the College of Preceptors, or those of any legally constituted Examining Body previously approved by the Council, provided Latin and Arithmetic be included in the subjects, are accepted in lieu of this examination.

## MINOR EXAMINATION.

(For Registration under the Pharmacy Act, 1868, as "Chemists and Druggists.")

Candidates for this examination must have passed the First, or Preliminary, examination.

THE BOARDS OF EXAMINERS IN LONDON AND EDINBURGH meet for conducting the Minor, Modified, and Major examinations in February, April, June (London only), July, October, and December. Candidates must give notice to the Registrar of their intention to present themselves, and pay the fee, on or before the first day of the month in which the examinations are held. A registrar's certificate of birth and a certified declaration (on a form which will be supplied on application) that for three years he has been practically engaged in translating and dispensing prescriptions must be produced by each candidate at the time of giving notice. Secretary and Registrar, in London, Elias Bremridge, 17 Bloomsbury Square, London, W.C. Secretary to the Board in Edinburgh, Mr. P. McEwan, 119A George Street, Edinburgh.

The following form the subjects of examination:—

**Prescriptions.**—The candidate is required to read, without abbreviation, autograph prescriptions, translate them into English, and render a literal as well as an appropriate translation of the directions for use. To detect errors, discover unusual doses, and have a general knowledge of Posology; also to render, in good Latin, ordinary prescriptions written in English.

**Practical Dispensing.**—To weigh, measure, and compound medicines; write the directions in concise language in a neat and distinct hand; to finish and properly direct each package. In awarding marks in this subject the time taken by the candidate in doing the work is taken into account.

**Pharmacy.**—To recognise the preparations of the Pharmacopœia which are not of a definite chemical nature, and have well marked physical characters, such as extracts, tinctures, powders, &c.; to give the proportions of the active ingredients, and possess a practical knowledge of the processes, and the principles of the processes, by which they are made, and of the best excipients and methods of manipulation for forming emulsions, pills, &c.

**Materia Medica.**—To recognise specimens of roots, barks, leaves, fruits, resins, gums, animal substances, &c., used in medicine; give the botanical and zoological names of the plants, &c., yielding them, and the natural families to which they belong; name the countries and sources from which they are obtained, the official preparations into which they enter, and judge the quality and freedom from adulteration or otherwise of the specimens.

**Botany.**—To recognise the more important indigenous plants used in medicine. To possess a general knowledge of the elementary structure of plants, and the structure and distinctive characters of roots, stems, leaves, and their parts. To name and describe the various parts of the flower.

**Chemistry.**—To recognise the ordinary chemicals used in medicine. To possess a practical knowledge of the processes by which they are produced, the composition of such as are compound, and explain the decompositions that occur in their production and admixture, by equations or diagrams. To determine practically, by means of tests, the presence in solution of the chemicals in common use, and explain the reactions which occur in each case. To possess a general knowledge of the laws of chemical philosophy and a practical knowledge of the means of determining specific gravities, densities, and temperature, and of the instruments appertaining thereto and the physical and chemical constitution of the atmosphere.

## MAJOR EXAMINATION.

(For Registration as "Pharmaceutical Chemists" under the Pharmacy Act, 1852.)

Candidates for this examination must have passed the Minor examination at least three months previously.

**Materia Medica.**—This comprises a practical knowledge of the methods of estimating the value of important drugs, of obtaining their active and proximate constituents in a

separate state; of identifying them and ascertaining their purity or impurity by tests.

**Botany.**—This comprises an intimate acquaintance with the parts of the flower, fruit, and seed; the functions and mode of arrangement of the different organs of plants; a knowledge of the general principles of classification, and of the Linnean and De Candolle's systems. The candidate must be able to distinguish practically between each of the following natural orders:—Ranunculaceæ, Papaveraceæ, Cruciferae, Malvaceæ, Leguminosæ, Rosaceæ, Cucurbitaceæ, Umbelliferae, Compositæ, Gentianaceæ, Convolvulaceæ, Solanaceæ, Atropaceæ, Labiatae, Scrophulariaceæ, Polygonaceæ, Euphorbiaceæ, Orchidaceæ, Iridaceæ, Liliaceæ, Melanthaceæ, Graminaceæ; and refer to their respective orders such specimens as may be shown to him.

**Chemistry.**—This comprehends an intimate knowledge of the laws of chemical philosophy, practical knowledge of the nature and properties of the elements and their compounds, both organic and inorganic, especially those used in medicine or the arts. The different combinations and decompositions must be explained by equation; also the qualitative analysis of the more important chemicals, e.g., Nitrates, Chlorides, Carbonates, Sulphates, Phosphates, Oxalates, Tartrates, &c., and the detection of impurities in them, and the volumetric estimation of the strength of all Pharmacopœia preparations in which standard solutions are ordered to be used.

An elementary knowledge of the properties of light, heat, electricity, and magnetism is also required.

If a candidate fail to pass either of the examinations, the fee will be returned, less one guinea, but he will be admitted to a subsequent examination, after an interval of three months, on giving the usual notice and payment of the full fee.

## Examination or Registration Fees and Subscriptions to the Society.

FEES.	ANNUAL SUBSCRIPTIONS on becoming connected with the Society.	
	£ s d.	£ s d.
First or Preliminary (Registered as Apprentices or Students) .. .. .	2 2 0	Eligible, on application to the Council, to be elected Apprentices or Students of the Society .. .. . 0 10 6
Minor (Registered as Chemists and Druggists) 3 3 0	3 3 0	Eligible, on application to the Council, to be elected Associates of the Society .. .. . 0 10 6
Major (Registered as Pharmaceutical Chemists) .. 5 5 0	5 5 0	Eligible, on application to the Council, to be elected Members of the Society .. .. . 1 1 0
		Or a Life Member's Commutation Fee of Twenty Guineas.
Chemists and Druggists in business before August 1, 1868, and registered as such, on being elected Members of the Society, pay an Entrance Fee of .. .. .	£2 2 0	
And Subscription for the current year .. .. .	1 1 0	
		£3 3 0

## COUNCIL EXAMINATION PRIZES.

Pharmaceutical chemists who were associates of the Society at the time of passing the Major examination will be entitled to compete for the following prizes at the end of the session, in the month of July, in which they passed the Major examination.

First Prize.—Pereira Medal in silver, and a present of books value 5*l.*, or thereabouts, given by Mr. T. H. Hills.

Second Prize.—The Pharmaceutical Society's Medal in silver, and a present of books value 3*l.*, or thereabouts, given by Mr. T. H. Hills.

Third Prize.—The Pharmaceutical Society's Medal in bronze, and a present of books value 2*l.*, or thereabouts, given by Mr. T. H. Hills.

Subjects of Examination.—Materia Medica, Botany, and Chemistry.

## PHARMACEUTICAL SOCIETY OF IRELAND.

Only one qualification—that of Pharmaceutical Chemist—is recognised by the Council. Women are admitted to examination under the same limitations as men. Licentiates of the Apothecaries' Hall, of Ireland, may be registered as Pharmaceutical Chemists without examination on payment of three guineas. The members' subscription is one guinea per annum, or a life composition of ten guineas.



The following are the regulations for candidates for the qualification of Pharmaceutical Chemist:—

#### PRELIMINARY EXAMINATION.

*Latin.*—To translate into English, and parse, one or more sentences from a Latin author:—Caesar's "Commentaries," First Book; or Virgil's "Æneid," First Book.

*English.*—To write on a subject selected by the examiner, and to write from dictation.

*Arithmetic.*—The first four rules, simple proportion, and decimals. To describe the weights and measures of the Pharmacopœia, and of the metric system.

*The Rudiments of Chemistry and Botany.*—(See Roscoe's "Chemistry"—Science Primers, and Browne's "Botany"—Elementary Science Manuals.)

Candidates presenting themselves for this examination must not be under sixteen years of age.

The fee for this examination will be 2*l.* 2*s.*

In case of rejection, the fee to be retained, but a rejected candidate may present himself for examination after a lapse of six months without additional payment.

Preliminary examinations are held on the first Monday of January, April, July, and October.

#### PHARMACEUTICAL EXAMINATION.

Candidates presenting themselves for this examination must be twenty-one years of age, and have passed the Preliminary Examination at least one year previously.

Candidates must also have been practically engaged in compounding and dispensing for at least two years, under the instruction of a pharmaceutical chemist or apothecary, and must produce a certificate of having attended a practical course in chemistry in either Trinity College, Royal College of Surgeons, Carmichael College, and the Queen's Colleges of Belfast, Cork, and Galway, or Royal College of Science.

Examinations are held on the first Wednesday of January, April, July, and October.

*Botany.*—To recognise the principal indigenous plants used in medicine, to refer them to their natural orders, and to give the definitions and the distinctive characters of their several parts.

*Materia Medica.*—To recognise specimens of the drugs of the Pharmacopœia, to describe their characters and active principles, name the sources from which they are obtained, and the official preparations into which they enter; and to detect adulterations.

*General and Pharmaceutical Chemistry.*—The elementary laws of chemistry and physics, including chemical equations. To recognise the chemical substances of the Pharmacopœia, to describe the processes by which they are obtained; qualitative analysis, including the tests of the Pharmacopœia and volumetric analysis; and to submit to a practical examination in these subjects when required.

*Practical Pharmacy.*—To translate Latin prescriptions; to detect dangerous doses; to compound and dispense correctly.

To explain the processes of making the non-chemical preparations of the Pharmacopœia, and to recognise them.

Candidates are to give notice to the Council, seven clear days before the stated meetings for examination, of their desire to be examined; and also to lodge a receipt of having paid the fee of five guineas into the Bank of Ireland to the credit of the Society.

In case of rejection, the fee will be retained, but a rejected candidate may present himself for re-examination after a lapse of six months.

**FORM OF NOTICE.**—"I, \_\_\_\_\_, desire to be examined for the licence to act as a Pharmaceutical Chemist."

Mr. H. J. Fennell, College of Physicians, Kildare Street, Dublin, will give any additional information required.

#### PHARMACEUTICAL SCHOOLS.

There are, as we have stated, no schools where a pharmaceutical candidate is required to attend before he offers himself for examination. In most instances, however, the student finds it desirable if not essential to avail himself of the advantages which an organised school offers. The following are the principal establishments where special pharmaceutical instruction is provided:—

##### THE SCHOOL OF PHARMACY

17 Bloomsbury Square, W.C.

This school is conducted on the premises of the Pharmaceutical Society, but it is not under the direct control of the Council, nor does the Society derive any profit from the fees paid by students. The Society not only provides laboratories, lecture-theatre, &c., rent free, but further contributes 100*l.* per annum towards the salary of each of the professors. The appointment of the professors is also in the hands of the Council.

Application for admission to the school, for prospectuses, or for further information, may be made to the professors or their assistants in the Lecture Room or Laboratories, 17 Bloomsbury Square, London, W.C.

#### PROFESSORS.

CHEMISTRY AND PHARMACY .. Professor REDWOOD, F.C.S.  
BOTANY AND MATERIA MEDICA .. Professor BENTLEY, F.L.S.  
PRACTICAL CHEMISTRY .. Professor ATTFIELD, F.R.S.

The forty-first Session, 1882-83, will commence on October 2, 1882, and terminate on July 28, 1883.

#### CHEMISTRY AND PHARMACY.

	£	s.	d.
One Course .. .. .	3	3	0
An entire Session (two Courses) .. .. .	4	4	0
Perpetual admission .. .. .	5	5	0

To connect this course with that of practical chemistry, the demonstrator, Mr. W. R. Dunstan, will assist at the after-lecture examinations.

#### BOTANY AND MATERIA MEDICA.

	£	s.	d.
Botany and Materia Medica, one Course (five months) ..	2	2	0
An entire Session (two Courses), including Systematic and Practical Botany .. .. .	3	3	0
Classification of Plants and Practical Botany, separately ..	1	1	0
Perpetual Admission to all the Courses .. .. .	4	4	0

A student entering for the first course on Botany and Materia Medica is also entitled to attend the lectures on Systematic and Practical Botany on payment of two guineas and a half at the time of entering this first course in October.

#### PRACTICAL CHEMISTRY.

Professor of Practical Chemistry .. Dr. JOHN ATTFIELD, F.C.S.  
Demonstrator .. .. . Mr. W. R. DUNSTAN, F.C.S.  
Assistant-Demonstrator .. .. Mr. F. W. SNORR.

#### FEES.

Hours of Study	One Month	Two Months	Three Months	Five Months	Ten Months
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
10.0 to 5.0 daily (Sat. 10.0 to 2.0)	4 4 0	7 7 0	10 10 0	15 15 0	26 5 0
10.0 to 5.0 on any 3 days weekly ..	2 17 6	4 17 6	6 16 6	10 10 0	17 17 0
10.0 to 5.0 on any 2 days weekly ..	2 2 0	3 10 0	4 17 6	7 7 0	12 12 0
Any 3 hours daily	2 17 6	4 17 6	6 16 6	10 10 0	17 17 0
Any 2 hours daily	2 2 0	3 10 0	4 17 6	7 7 0	12 12 0

#### NORTH BRITISH BRANCH OF THE PHARMACEUTICAL SOCIETY.

119A George Street, Edinburgh.

The following classes are open to pharmaceutical students:—

*Chemistry.*—Dr. Stevenson Macadam, daily, at Surgeons' Hall. November to April.

*Practical and Analytical Chemistry.*—Dr. Macalan's laboratory is open daily. Courses are also given at the New Medical School.

*Materia Medica.*—Dr. F. W. Moinet. The course extends from November to January and May to July.

Dr. Wm. Craig lectures at the New School of Medicine.

*Botany.*—Professor Dickson. May to July.

#### THE SOUTH LONDON SCHOOL OF PHARMACY.

325 Kennington Road, S.E.

Director—Dr. JOHN MUIR, M.A. Secretary—Mr. WM. BAXTER.

The session commences on September 1<sup>st</sup>, and lasts till July 25, and the following courses of lectures, etc., are delivered at least twice during the session:—Botany: A course of thirty lectures. Materia Medica: A course of thirty lectures. Theoretical Chemistry: A course of sixty lectures. Practical Chemistry: I. Junior Course (three months).—This includes—1. The manufacture of the chief chemicals of the B.P., in which the processes are typical; 2. Qualitative analysis, and separation of bases and acids. II. Senior Course (six months).—This extends to—1. Qualitative analysis of mixtures. 2. Quantitative analysis of B.P. substances, gravimetric and volumetric; 3. Ultimate organic analysis.

*Fees.*—1. For the whole course of lectures (including admission to the museum), *l.* 4*s.* 2. For the laboratory—Junior Course, one month, 3*l.* 3*s.*; three months or over at 2*l.* 2*s.* a month; Senior Course, first month, 4*l.* 4*s.*; three months or over at 3*l.* 3*s.* a month. A pharmaceutical tutorial department is devoted to teaching each student either privately or in small classes. The usual average cost for each examination is 10*l.* 1*s.*

Over 1,550 persons from this school have passed the Pharmaceutical Examinations. Instruction in Microscopy and General and Food Analysis is given to medical officers of health and others.

#### WESTMINSTER COLLEGE OF CHEMISTRY AND PHARMACY.

Trinity Square, London, S.E.

Proprietors—Messrs. WILLS & WOOTTON.

The session extends from September 1 till July 20.

Two classes of students are received, and 400 lectures are delivered on the following subjects:—Latin, Dispensing, Pharmacy, Botany, Materia Medica,

Chemistry, Physics. Instruction is also given at special terms in Analytical and Microscopical Work.

*Fees*.—Preliminary course, one month, 2l. 2s., or until qualified, 5l. 5s.; Minor course, one month, 3l. 3s., three months, 7l. 7s., until qualified, 10l. 10s. (For this fee extra books and apparatus are supplied free of cost.) Major course, one month, 3l. 3s., three months, 7l. 7s., until qualified, 10l. 10s. Fee to old students according to arrangement. Accommodation is provided for resident pupils. Terms, 12. 1s. per week. Students work independently, and can therefore enter at any time.

Medals and certificates are awarded at examinations held in April, July, and December in each year.

Evening Classes are held for gentlemen engaged during the day. Major and Minor, Tuesdays and Thursdays, 7 till 9 P.M.; Preliminary, Friday, 7 till 9 P.M.

*Fees for Evening Classes*.—Major, one month, 8s.; three months, 12. 1s.; for the entire session (twelve months), commencing from date of entrance, 2l. 2s. Minor, one month, 6s.; three months, 15s.; six months, 17. 1s.; twelve months, 17. 11s. 6d. Preliminary, one month, 4s.; three months, 10s. 6d.; six months, 17s. 6d.

*Postal Surges*.—Fee for Preliminary examination, 10s. 6d.; Royal College of Surgeons and Apothecaries' Hall, 12. 1s.; for Minor, or Major, 17. 1s. Courses of lectures on all the subjects of the examinations are sent through the post from the College, the student returning his last lecture when he receives a new one.

#### CENTRAL SCHOOL OF CHEMISTRY AND PHARMACY.

173 *Marylebone Road, London, N.W.*

Teacher of Chemistry and Physics: Mr. A. P. Luff, B.Sc., F.C.S., F.L.S. F.I.C.; Teacher of Pharmacy, Botany, Materia Medica, &c.: Mr. J. Woodland, F.C.S., F.L.S. The session extends from September 1 to July.

A register of lodgings is kept at the school for the convenience of students.

A class in Practical Dispensing is held; fee, 10s. 6d. A well-fitted laboratory is attached to the school; students are required to provide themselves with some apparatus and chemicals.

*FEES* (payable in advance):—One month, 4l. 4s.; two months, 7l. 7s.; three months, 9l. 9s.; the entire session, 15l. 15s. Students wishing to attend the classes on Chemistry and Physics only, can do so by payment of 12. 1s. per month.

Students wishing to enter their names, and for further particulars, are requested to apply to Messrs. Luff & Woodland, 173 Marylebone Road, N.W.

#### MANCHESTER COLLEGE OF CHEMISTRY AND PHARMACY.

225 *Oxford Street, Manchester.*

Principal—Mr. W. S. TURNER, late of Hingham and Grimsby.

There are daily classes and tutorial instruction in the subjects for the Preliminary, Minor, and Major examinations. The year is divided into four courses—January to April, April to July, August to October, October to December.

*Fees* for instruction only, Minor, Major, or Preliminary, nine guineas for any one course; payable in advance, either as one sum or by instalments. For shorter periods, 3l. 3s. per month. Board and lodgings can be obtained on the usual terms in registered houses.

There are also evening classes for Minor and Major students, from 8 to 10 P.M., commencing in August. Fee for classes from August to December, 5l. 5s.; from August to February, 6l. 6s., or 12. 1s. a month.

#### EDINBURGH SCHOOL OF PHARMACY AND CHEMISTRY.

*Marshall Street, Nicolson Square, Edinburgh.*

The classes in Chemistry qualify for graduation in Science and Medicine at the University of Edinburgh, and all other examining boards in Medicine in the United Kingdom. The Pharmaceutical courses are conducted separately from the qualifying instruction. Besides the usual day classes, there are evening classes for gentlemen engaged in business during the day. A dispensary is attached to the School, in which the students are instructed in Practical Pharmacy and Dispensing.

*LECTURERS*.—Chemistry: Dr. Drinkwater; Materia Medica and Pharmacy: Dr. Urquhart; Botany: Mr. McAlpine, B.Sc.

There are day and evening classes for preparation for the Pharmaceutical Preliminary examinations conducted by Mr. C. H. Wright, M.A. Edinb.

The Practical classes are conducted by the lecturers on Pharmacy and Chemistry, respectively.

*Fees* for the session (3 months) Materia Medica, 2l. 2s.; Chemistry, 2l. 2s.; Pharmacy, 12. 1s.; Practical Chemistry, 2l. 2s.; Botany, 12. 1s.; Composition fee for a second session, 5l. 5s.

*THE PATRISON SCHOLARSHIP*.—The holder is entitled to free instruction in all the branches taught in the Pharmaceutical Section of the school. It is awarded by competitive examination twice yearly. Candidates are required to produce their apprenticeship indentures duly discharged, and must have passed the Preliminary examination. Successful candidates, when their scholarship expires, must present themselves for the Minor examination. The subjects of the scholarship examination are pharmacy, materia medica, and the elements of chemistry. The next examination will be held on September 29.

All information will be supplied by the secretary, Dr. Urquhart.

#### THE WEST CENTRAL SCHOOL OF CHEMISTRY AND PHARMACY.

19 *Great Coram Street, Russell Square, W.C.*

Principal—Mr. HENRY JUDD.

#### EDINBURGH SCHOOL OF MEDICINE,

*Minto House.*

Special classes for students of pharmacy are held here. For particulars apply to the Secretary.

#### TULLY'S POSTAL SYSTEM.

Mr. JOHN TULLY, of 115 Camden Road, Tunbridge Wells, "Hill's Prize-man," established his postal system in 1872. It is divided into three classes. No. 1 is for the Preliminary, including all the subjects of the syllabus. If the student fail on first presenting himself, he is instructed for the next examination free of charge, providing he passes it within six months; fee, 10s. 6d. No. 2 is for the Minor Examination for students under 20 years of age. It is intended to give direction to the studies, and to prevent the formation of an inattentive habit of reading. It includes fortnightly examination papers, and lectures which cover all the ground for the Minor and Major. Students can commence at any time. The fee is one guinea. No. 3 is for the Minor for students over 20, and includes a full series of lectures. Fee, one guinea, payable in advance. A special course is organised for the Modified and Apothecaries' Hall examinations.

#### PRIVATE SCHOOL OF PHARMACY AND PHARMACEUTICAL CHEMISTRY.

130 *Camden Road, London, N.W.*

Principal—Mr. J. W. Saunders, A.P.S.

The number of students is limited to 20. Instruction given for all the Pharmaceutical examinations. Evening classes are arranged from 7 to 10 P.M. every week night except Saturday. Practical postal teaching is provided; fee for the course, 12. 1s. and postage.

*Fees* (payable by instalments).—Whole course, with laboratory work for an entire session, 8l. 8s.; one, two, or three months, per month, 3l. 3s.; for less than one month, per week, 12. 1s.; evening classes, one night a week, per month, 10s.; ditto, two nights a week, 15s.; private lessons, one hour, 2s. 6d.; two hours, 3s. 6d.

#### APOTHECARIES' ASSISTANTS' EXAMINATIONS.

By sections 17 and 20 of the Apothecaries' Act of 1815 a penalty of 5l. is imposed on any person who acts as an assistant to any apothecary to compound and dispense medicines without having obtained a certificate of fitness and qualification from the Court of Examiners. By section 19 of the Act the fee for the assistants' certificate is fixed at two guineas.

The only privilege conferred by the certificate is the power to act as assistant to apothecaries.

The following are the regulations of the Court of Examiners relating to assistants:—The Court of Examiners meet in the hall every Thursday, where candidates are required to attend at a quarter before five o'clock.

Every candidate intending to offer himself for examination must give seven days' notice previous to the day of examination, and must at the same time deposit the fee, two guineas, at the office of the beadle, where attendance is given every day, except Sunday, from ten to four o'clock; Saturdays, ten to two.

The examination of candidates for certificates of qualification to act as assistant, in compounding and dispensing medicines, will be as follows:—In translating physicians' prescriptions, in the British Pharmacopœia, in pharmacy, pharmaceutical chemistry, materia medica, and medical botany.

By the 22nd section of the Act of Parliament no rejected candidate can be re-examined as an assistant until the expiration of three months.

In 1880 the following additional regulations were promulgated for the subject of botany:—

Candidates will be expected to display a competent knowledge of structural and physiological botany, such as may be obtained from lectures and from any elementary work.

They will be expected to describe and identify typical specimens, and to give the distinguishing characters of the following natural orders, viz.—Composite, convolvulaceæ, cruciferae, eueurbitaceæ, filices, gentianaceæ, graminaceæ, labiate, leguminosæ, liliaceæ, melanthaceæ, papaveraceæ, ranunculaceæ, rosaceæ, rutaceæ, scropulariaceæ, solanaceæ, umbelliferae.



## Medical Education.

ENTRANCE to the profession of medicine in Great Britain costs less than to any other. The power to relieve pain and disease is a great attraction to many, and medical practitioners as a body hold an enviable position in public esteem. The profession cannot be said to be overcrowded. There are some country districts where doctors are too few; but, at the same time, the remuneration is not large, and in agricultural districts the doctors have had, perhaps, more than their share of the general distress. The Medical Act of 1858 rules the practice of medicine in Great Britain. According to its theory, no one may assume any title leading the public to suppose that he is a medical man unless his name appears on the Medical Register.

No unregistered person can recover fees for medical advice in Courts of Law.

Anyone may practice the art of healing, and may recover reasonable charges for medicines supplied.

Only registered persons can hold public appointments or give certificates of death. Inquests ought theoretically to be held on the cause of every death which is not certified by a legally-qualified medical practitioner; but this law is often evaded.

In no civilised country in Europe is admission to the medical profession obtained so easily. There are 61 registrable qualifications granted by no less than 19 examining bodies, and the difficulty of the examinations is very unequal. Ten of the examining bodies are Universities; the remainder are corporations of medical and surgical practitioners, which have been created at various times and for very different purposes. In England nearly all the students endeavour to become members of the Royal College of Surgeons of London. Government appointments are granted only to those who possess a medical as well as a surgical diploma. Members of the Royal College of Surgeons, therefore, generally seek, in addition, the licence of the Royal College of Physicians of London or of the Society of Apothecaries. In Scotland most of the practitioners are connected with one of the four Universities. These demand medical as well as surgical knowledge, and their diplomas are accepted as a double qualification by Government. In Ireland over half the practitioners have obtained their qualifications from the Dublin Colleges of Physicians and Surgeons. Next follow, in order of popularity, Queen's University, the Edinburgh Colleges of Physicians and Surgeons, and Dublin University.

The General Medical Council requires that all who apply for registration as medical practitioners shall have passed through a minimum course of education. There must first be a preliminary examination in arts or general education. The student must afterwards spend at least four winter sessions or three winter and two summer sessions in professional study at some recognised school. As soon as convenient he should enter his name on the books of one of the hospital schools mentioned hereafter. He must also be registered as a medical student with the General Medical Council, but the dean or secretary of the school almost invariably undertakes this duty. During his attendance at this school he must undergo certain courses of instruction which vary somewhat according to the regulations of the licensing bodies. After attaining the age of 21 he may present himself for the final examination, when, if successful, he will receive a licence to practise medicine within the borders of Great Britain and Ireland. Men of ordinary abilities are generally content with a licence to practise. If money and time need not be considered, while abilities are above the average and the student aims at the higher walks of the profession, he should set himself to acquire a University degree.

This requires a special course of study from the commencement. The degrees most difficult to obtain are those of the London University. Next in order of difficulty are those of Queen's University, Ireland, while the degrees of the Edinburgh University are highly esteemed on account of the excellence of the teaching in the University classes. The Universities all require some special preliminary examination, and preparation is best made for this before the student leaves school. If medical studies are com-

menced without taking this into consideration, and the desire for a degree afterwards arises, the student will find that he must break off his professional studies and return to a laborious course of general subjects before he can commence his University career. It is, therefore, of great importance to decide at the outset what qualifications shall be striven for.

The licences to practise are not all equally easy to obtain. In England the examination for the licence of the Society of Apothecaries is the easiest, and Dr. Semple, Chairman of the Board of Examiners, stated before the Royal Commission on the Medical Acts, that the candidate who went into practice only on the licence of the Society had not been sufficiently tested as to his knowledge of anatomy. Many men, ignorant and quite unfit for the profession, endeavoured to enter it by this portal, and one result was that the number of rejections at the first examination was enormously swelled, amounting to as much as 50 per cent. This examination is specially severe in chemistry.

In the year 1875 the English corporations examined 840 candidates, the universities only 48; the corporations granted 681 qualifications, the universities 33. In the year 1880 the Royal College of Surgeons admitted 618 candidates. These figures will show the special popularity of the College. The licence to practise of the Durham University has been rarely granted during the last few years. The university authorities, as far as possible, refer elsewhere those who wish for it. The Medical School at Oxford is practically defunct.

In Scotland the Royal College of Physicians and the Royal College of Surgeons of Edinburgh give separate diplomas, but they also unite in holding an examination, which entitles the candidate to a licence in medicine from the one, and a licence in surgery from the other. The Royal College of Physicians of Edinburgh unites also with the Faculty of Physicians and Surgeons of Glasgow for the same purpose. The latter double licence is popular. Many Irish students travel to Scotland for the purpose of taking it.

In Ireland the licence of the Apothecaries' Hall, Dublin, is the easiest to obtain. The fee for examination is only 10s. Its special feature is the prominence given to *Materia Medica*. It is rarely taken as a sole qualification. There are in Ireland about 2,450 medical practitioners, most of whom have a double qualification. Between 1,000 and 1,100 are connected as Licentiates or Fellows with the Irish College of Surgeons; between 600 and 700 with the College of Physicians; 300 to 400 with the Dublin University; 200 to 300 with the Queen's University; and 900 to 1,000 with the Irish Apothecaries' Hall.

A statement made before the Royal Commission on the Medical Acts, by Dr. Jacobs, editor of the "Irish Medical Directory," illustrates the inequality of the requirements for qualification. A person desiring to obtain the M.B. and M.Ch. degrees of the University of Dublin will have to attend 13 courses of lectures, occupying at least three years in medical study. It will cost him 136*l.* for his medical and surgical qualifications, besides 83*l.* for the arts qualification, which is necessary to his obtaining these as a University student, making a gross total of 219*l.* The lectures are 61*l.*, the hospital 41*l.*, and the degree fees 31*l.*, that makes 136*l.* If the same student desires to obtain the same degrees in the Queen's University he can obtain them upon lectures which may be put in in two years at an expense of 61*l.*, less than half the expense of even the medical portion of his education in Dublin University, and one year less in the way of curriculum. If he desires he can obtain qualifications at the Apothecaries' Hall, with 12 courses of lectures, for 73*l.*; but if he wishes to obtain the Dublin double diploma, that is, the licence of the College of Surgeons and the College of Physicians, it will cost him in three years 157*l.* So that the expense of obtaining degrees varies in Ireland from 61*l.* to 157*l.*; and the length of the curriculum varies from two to four years.

Useful information as to the different careers open to a medical man is given in Dr. Driver's little book, "What shall be my Practice?"

Below we give brief summaries of the regulations for the various preliminary examinations; second, of the fees and course of study required by the different licensing bodies; and lastly, of the fees for the course of study at the hospital

schools. In each case it will be well to apply to the secretary for the prospectus or regulations, which will give many details that we are unable to include in this summary.

#### PRELIMINARY EDUCATION.

The recommendations of the General Medical Council, as far as relate to the preliminary examination, and at present in force, are as follows:—No student should be admitted to his final examination till 45 months have elapsed since his registration. No student can be registered before he has passed an examination conducted by one of a certain number of educational bodies in the following subjects:—(1) English language, including grammar and composition; (2) arithmetic, including vulgar and decimal fractions; algebra, including simple equations; (3) geometry—first two books of Euclid, or the subjects thereof; (4) Latin, including translation and grammar; (5) one of the following optional subjects:—Greek, French, German, elementary mechanics of solids and fluids (meaning thereby mechanics, hydrostatics, pneumatics, and hydraulics).

Medical training generally begins at the age of 17. It is advisable that before leaving school the student should pass one of the examinations now to be mentioned:—

**Oxford, Cambridge, and Durham.**—Local examinations: Senior, including Latin and Mathematics, or Junior, including Latin and Mathematics, and one of the following optional subjects:—Greek, French, German, Natural Philosophy (including mechanics, hydrostatics, and pneumatics).

**London (Matriculation Examination), Edinburgh, Aberdeen, Glasgow, and St. Andrew's.**—Honours or Senior certificates granted under local examinations (to include English Literature, Arithmetic, Algebra, Geometry, Latin, and one of the following optional subjects:—Greek, French, German, Natural Philosophy).

**Queen's University (Ireland).**—Local examinations for men and women. Certificates to include all the subjects previously mentioned.

**Royal College of Preceptors.**—First-class certificate.

A degree in Arts from any British, and nearly any colonial, University is accepted in place of these examinations. Oxford Responsions and Moderations, and Cambridge Previous examination, and their equivalents at other Universities, are also accepted.

If neither of these has been undertaken, the student must pass one of the entrance examinations held by the medical licensing bodies.

**Durham University.**—Registration examination for medical students. Subjects—Rudiments of Religion, Literature, and Science.

**Aberdeen, Edinburgh, Glasgow, and St. Andrew's Universities.**—Preliminary examination for graduation in medicine or surgery. Subjects—English, Latin, Arithmetic, Elementary Mathematics and Mechanics, and two, at least, of the following:—Greek, French, German, Higher Mathematics, Natural Philosophy, Natural History, Logic, Moral Philosophy. For further information apply to the Secretaries of the Universities.

**Royal College of Surgeons of England.**—This was formerly the most popular examination, but it was discontinued at the beginning of this year.

**Society of Apothecaries, Blackfriars, London, E.C.**—Held on the last Friday and Saturday in January and April, and the third in September. A form of application must be obtained and signed. Fee, 1 guinea, to be paid at least a week before the examination. For further information apply to the Boodle.

**Royal College of Physicians and Royal College of Surgeons, Edinburgh.**—English Grammar and Composition, Arithmetic to Decimals, Algebra to Simple Equations, Euclid, books I. and II., Latin, and one of the following:—Greek, French, German, Natural Philosophy. Fee, 10s., to be paid not less than two days before the examination. For dates of examination, &c., apply to the officers of the Colleges.

**Faculty of Physicians and Surgeons of Glasgow.**—Preliminary examination, much like the above. Held in April, July, September, and October. For further information, apply to the Clerk.

**Apothecaries' Hall of Ireland.**—English Grammar, Composition, and History, Arithmetic, Algebra to Simple Equations, Euclid, books I. and II., Latin, Livy, or Virgil's "Æneid," first two books, Greek, Xenophon's "Anabasis" or Homer's "Iliad," book I., French or German, and either of the following:—Natural Philosophy and Natural History. Held on the third Thursday in January, April, July, and October. Apply to the Secretary.

**Royal College of Surgeons of Ireland.**—Apply to the Registrar.

Pursuant to a resolution passed by the General Council at its meeting on July 14, 1880, the changes made by the Council in its regulations for preliminary general education will, from January 1, 1882, be as follows:—On and after January 1, 1882, no person shall be allowed to be registered as a medical student unless he shall have pre-

viously passed a preliminary examination in the subjects of general education as specified in the following list:—(1) English language, including grammar and composition; \* (2) English history; (3) modern geography; (4) Latin, including translation from the original and grammar; (5) elements of mathematics, comprising (a) arithmetic, including vulgar and decimal fractions; (b) algebra, including simple equations; (c) geometry, including the first two books of Euclid, or the subjects thereof; (6) elementary mechanics of solids and fluids, comprising the elements of statics, dynamics, and hydrostatics; † (7) one of the following optional subjects:—(a) Greek; (b) French; (c) German; (d) Italian; (e) any other modern language; (f) logic; (g) botany; (h) elementary chemistry.

#### PROFESSIONAL EDUCATION.

M.B. Degree	Age at Examination	Preliminary Requirements	Duration of Study (a)		No. of Examinations	Fees.
			Total	At own School or Residence		
London ..	21	Matriculation or arts degree and preliminary scientific examinations	4 years	—	2	£ s. 10 0
Cambridge ..	(b)	"Previous (c) examination"	5 years	—	3	5 + 2
Oxford ..	(b)	B.A. (c)	4 years	—	2	—
Durham ..	21	Degree in arts	4 years	1 year Newcastle	2	17 5
Edinburgh } Glasgow } Aberdeen } St. Andrew's } Dublin ..	21	Degree in arts or preliminary with additions	4 years	2 in Edinburgh	3	15 15
	(b)	B.A. and "previous medical"	4 years	3 courses	—	16 0

M.D. Degree	Age at Examination	Preliminary Requirements	(a) Duration of		Examinations or Theses	Fees
			Study	Practice		
London ..	—	M.B. }	2 or 1 +	3 5	Examination	£ s. 5 0
Cambridge ..	—	M.B. or M.A.	—	3 years or 9 terms	Essay	—
Oxford ..	—	M.B.	—	3 years	3 examinations and essay	—
Durham ..	21	M.B.	—	2 years	Dissertation	—
Or ..	40	Registration as practitioner	—	15 years	Essay Examination	6 0 52 10
Edinburgh } Glasgow } Aberdeen } St. Andrew's } Dublin (Trinity College)	24	M.B.	—	2 years	Thesis	15 5
Queen's University, Ireland ..	—	Entrance examination in arts	4	—	"Exercise"	13 0

\* The General Medical Council will not consider any examination in the English language sufficient that does not fully test the ability of the candidate:—(1) To write sentences in correct English on a given theme, attention being paid to spelling and punctuation as well as to composition; (2) to write correctly from dictation; (3) to explain the grammatical construction of sentences; (4) to point out the grammatical errors in sentences ungrammatically composed, and to explain their nature; and (5) to give the derivation and definition of English words in common use.

† This subject may be passed either as preliminary, or before, or at the first professional examination.



Surgical Degrees	Age at Graduation	Preliminary Requirements	Duration of		Examinations	Fees
			Study	Practice		
B.S. London ..	—	M.B.	1 course	—	1	£ 5
M.S. London ..	—	B.S.	2 years, or	5 years	1	5
M.S. Cambridge	—	M.B.	3 years	—	1	—
M.S. Edinburgh	—	M.B.	1 course	—	1	—
C.M. Edinburgh Glasgow	21	Degree in arts, or preliminary with additions	4 years	—	3	—
B.S. Dublin ..	—	B.A. and M.B.	4 years	—	1	10
M.S. Dublin ..	—	B.S.	—	3 years	1	11
M.Ch. Queen's University	—	Entrance examination in arts	4 years	—	—	—

Other Licences to Practise	Age at Examination	Preliminary Requirements	Duration of		Number of Examinations	Fees
			Study	At a Special School		
University of Durham—Licence in medicine and licence in surgery ..	—	—	—	—	—	£ s.
University of Dublin—Licentiate in medicine or surgery	(b)	2 years of "arts" studies	4 years	3 courses	—	10 0
Royal College of Physicians, London—Licentiate ..	21	Preliminary Degree in arts	45 months	—	3	15 15
Member ..	25	—	5 years	—	3	31 0
Royal College of Surgeons—Licentiates ..	21	Preliminary Degree in arts and L.R.C.S.	4 years	—	2	9 9
Members ..	21	—	4 years	—	2	22 0
Fellows ..	25	M.R.C.S.	6 years	—	2	31 10
Royal College of Physicians, Edinburgh—Licentiate ..	21	Preliminary	4 years	—	2	15 15
Member ..	24	L.R.C.P.	—	—	—	21 0
Fellow ..	25	M.R.C.P.	—	—	—	31 10 and 25/ stamp

Other Licences to Practise	Age at Examination	Preliminary Requirements	Duration of Study	No. of Examinations	Fees
Royal College of Surgeons, Edinburgh—Member ..	21	Preliminary	45 months	2	15 15
Faculty of Physicians and Surgeons, Glasgow (c)	21	Preliminary	45 months	2	15 15
King's and Queen's College of Physicians in Ireland—Licence ..	—	Preliminary	4 years	2	16 16
Membership ..	25	Licentiate	—	—	21 0
Royal College of Surgeons, Ireland—Licentiate ..	—	Preliminary, including Greek	4 years	2	27 6
Fellowship ..	25	B.A.	6 years	1 (with thesis)	36 15 (unless licentiate)
Apothecaries' Hall of Ireland—Licence for medicine & pharmacy	21	Preliminary	4 years, 1 practical pharmacy	2	—

(a) In each case the duration of study is to be taken as additional to the preliminary requirements.

(b) Twenty-one is the lowest age accepted by the General Medical Council, but not definitely fixed by the University.

(c) The student must reside three years at the University.

(d) The University of St. Andrew's grants degrees of Doctor of Medicine to practitioners 40 or more years of age, under special regulations.

(e) A conjoint examination for a double diploma is held by the Royal College of Physicians, Edinburgh, and the Faculty of Physicians and Surgeons of Glasgow.

NOTE.—Royal College of Surgeons and Royal College of Physicians, Edinburgh, hold a joint examination in medicine and surgery. Successful candidates receive the diplomas of L.R.C.P.E. and L.R.C.S.E.—a double qualification, which is registrable under the Medical Act.

## MEDICAL SCHOOLS.

BRILLIANT students will do better at a large school than at a small one. Men of ordinary talents are more likely to acquire a sound knowledge of their profession at a small school, where they come more in contact with the teachers, and the teachers have more inducement to endeavour to extend their school. It is also of great advantage to a student to acquire his education at two different schools—the more different the better. Considerations of locality and convenience generally decide the choice. The cost of a complete education at the London hospitals varies very considerably.

Further information concerning many of the schools will be found in our advertisement pages.

**St. Bartholomew's Hospital, West Smithfield, E.C.**—710 beds. Fees for perpetual attendance on lectures and hospital practice, 130 guineas, or 125 guineas in advance; for dental students, 63 guineas.

**Charing Cross Hospital.**—180 beds. Fees for matriculated students (students who enter for their whole course at the hospital), 91l. 7s. in five instalments; for dental students, 42l. 2s. Matriculated students enjoy special advantages.

**St. George's Hospital, Hyde Park Corner, S.W.**—351 beds. Fee for the whole course, 125l. in advance; for dental students, 55l.

**Guy's Hospital, St. Thomas's Street, Borough, S.E.**—695 beds. Fee, 125 guineas in advance; for dental course, 63 guineas.

**King's College, Strand, W.C.**—170 beds in hospital. Fee, 125l. in advance.

**London Hospital, Mile End, E.**—800 beds. Fees, 90 guineas in advance; dental course, 40 guineas.

**St. Mary's Hospital, Cambridge Place, Paddington, W.**—190 beds. Fee, 119 guineas in advance; for dental students, 62½ guineas.

**Middlesex Hospital, Berners Street, W.**—300 beds. Fee, 90l.; for dental surgery, 42l.

**St. Thomas's Hospital, Albert Embankment, Westminster Bridge.**—572 beds. Fee, 125l.; for dental students, 55l.; dental practice, 3 guineas.

**University College Hospital, Gower Street, W.C.**—Fee, 125 guineas.

**Westminster Hospital.**—215 beds. Fee, 100l.; for dental students, 51l.

**London School of Medicine for Women, Henrietta Street, Brunswick Square.**—Established to provide complete medical education for women. Its classes are recognised by the University of London and the King and Queen's College of Physicians of Ireland. Fee for lectures, 80l.; for hospital practice, 20l. the first year, 15l. each succeeding year, or 45l. in advance.

**Queen's College, Birmingham. Faculty of Medicine.**—Composition fee, 100 guineas. Students are admitted to two hospitals with 400 beds. There is a dental school here.

**Bristol Medical School: Affiliated to University College, Bristol.**—Composition fee, 60 guineas for the college, and 35 guineas for the Infirmary, or 21l. for the General Hospital course. The Bristol Royal Infirmary contains 264, and the General Hospital 154, beds.

**Leeds School of Medicine.**—Composition fee, for lectures, 50 guineas; for medical and surgical practice at the Leeds General Infirmary (300 beds) each for three years, 20 guineas; perpetual, 25 guineas; total fees, 96l. 12s.

**Liverpool Royal Infirmary School of Medicine.**—300 beds. The perpetual hospital fee is 32 guineas; the composition fee for lectures is 50 guineas.

**Owens College, Manchester.**—College composition fee, 60 guineas; hospital fee (Manchester Royal Infirmary), 40 guineas; 500 beds.

**Sheffield School of Medicine.**—Perpetual fee for lectures, 42l. Hospital practice may be attended either at the General Infirmary (180 beds), or the Public Hospital and Dispensary (110 beds). Perpetual fee in each case, 35 guineas.

**Dr. Steeven's Hospital and Medical College, Dublin.**—The hospital contains 250 beds. Composition fee for the medical school, 56l. 3s. 6d.; fee for hospital, 12 guineas for nine months.

**Catholic University of Ireland. School of Medicine, Cecilia Street, Dame Street, Dublin.**—Perpetual fee for lectures, 56l. 17s. 6d.

**New Carmichael College of Medicine and Surgery, Aungier Street, Dublin.**—For particulars apply to the Registrar, Dr. Harvey, 7 Upper Merrion Street, Dublin.

**Carmichael College of Medicine and Surgery, Aungier Street, Dublin.**—This is connected with the following hospitals:—The Adelaide, City of Dublin, Cork Street (Fever), House of Industry, Meath, and Mercer's. Fee for the full course of lectures for the Royal College of Surgeons, Ireland, 5*l.* 5*s.* 6*d.*

**Queen's College, Belfast. Faculty of Medicine.**—Fees according to the classes attended—generally 2*l.* a class. Hospital practice must be obtained outside the college. Two scholarships of 24*l.* are awarded to first year's medical students.

**Queen's College, Galway. Faculty of Medicine.**—Minimum fee for the degree of M.D., 39*l.* 5*s.* Hospital practice must be obtained elsewhere.

**Anderson's College, Glasgow.**—Fees for all lectures and hospital practice (at the Glasgow Royal Infirmary, 570 beds), 4*l.*

**School of Medicine, Edinburgh.**—Fee for study required for a double qualification, 95*l.*, including fee for examination.

**University of Glasgow Medical School.**—Total minimum expenses for M.B. and C.M., 90*l.*

### ARMY MEDICAL PRACTICE.

CANDIDATES for the post of army surgeon must be doubly qualified, and undergo a special examination. If successful they pass through a course of special training at the Government expense, undergo other examinations, and then receive their commission. The Naval and Indian Medical Service are under very similar regulations. Full information can be obtained on application to the Army Medical Department, Whitehall.

### THE DENTAL PROFESSION.

THE Dentists Act, 1878, provides that only persons who are registered under the Act shall be allowed to call themselves dentists, or in any way to lead the public to suppose that they are dentists, or to recover fees for dental operations in the legal courts, under a penalty of 20*l.*

It should be noted that the practice of dental operations is not forbidden. The notice "Teeth Extracted" will not incur a penalty so long as no title is assumed which would lead the public to suppose that the person is registered. But if credit is given for such operations, the debtor might repudiate the debt, and the creditor would have no remedy against him.

The only persons now eligible for registration under the Dentists Act are "licentiates in dental surgery or dentistry of any of the medical authorities" who have been specially empowered by the Act to institute examinations in this subject. The only limitation imposed by the Act on the granting of these licences is that the candidates shall be 21 years of age. The fee for registration, in addition to all other charges, is 5*l.*

The Royal College of Surgeons of England had established examinations in this subject long before the passing of the Dentists Act, and its diploma of L.D.S., or Licentiate in Dental Surgery, is deservedly esteemed. The regulations under which this is granted are as follows:—The candidate must pass a preliminary examination recognised by the College. He must be 21 years of age, and must have been engaged during four years in acquiring professional knowledge, and during not less than three years in acquiring a practical familiarity with the details of mechanical dentistry under the instruction of a competent practitioner. There is no regulation forbidding him to carry on these courses of study at the same time. He must also attend one course of lectures by recognised teachers in each of the following subjects:—Physiology, surgery, medicine, materia medica, chemistry, chemical manipulation, and metallurgy; and two courses in anatomy, dental anatomy and physiology (human and comparative), dental surgery, and dental mechanics. He must, at a recognised school, perform dissections during not less than nine months, attend the practice of surgery and clinical lectures on surgery during two winter sessions, and the practice of dental surgery during two years.

The examination is partly written, partly oral, and partly practical. Besides the purely technical matters relating to dentistry, it includes general medicine, anatomy, and physiology, and some branches of pathology and surgery. The fee for the diploma is 10*l.* 10*s.*

The Royal College of Surgeons of Edinburgh, the Faculty of Physicians and Surgeons of Glasgow, and the Royal Col-

lege of Surgeons in Ireland, grant Dental Diplomas. The examination and regulations are modelled on the plan of those of the Royal College of Surgeons of London.

Most of the large medical schools now provide the full course of study required by these regulations, the fee for the curriculum being generally not more than 30 guineas. There are, however, some special dental schools, which are mentioned below. The lectures on General Medicine, and so on, must be attended elsewhere.

**Dental Hospital of London and School of Medicine, Leicester Square.**—Total fee, 30 guineas. Dresserships and other appointments open free to all pupils who have entered for the entire course. Only specially dental matters are taught here. The student must obtain elsewhere the necessary instruction in general surgery, &c.

**National Dental Hospital and College, 149 Great Portland Street, W.**—Total fee, 25*l.* 4*s.* Dresserships open. Registered practitioners may attend short terms of hospital practice and single courses of lectures on paying the fees for them, instead of being required to enter for the full two years.

**Edinburgh Dental Hospital and School.**—The hospital is in 30 Chamber Street. Fees, for two years' hospital practice, 15*l.* 15*s.*; lectures, 4*l.* 4*s.* a course; total, 6*l.*

**Dental Hospital of Glasgow, Anderson's College.**—Fee for two years' practice, 10*l.* 10*s.*; lectures, 2*l.* 2*s.* a course.

**Dental Dispensary, Octagon, Plymouth.**—Fee for the entire dental curriculum required by the Royal College of Surgeons, 23*l.* 2*s.*

There are other dental hospitals scattered throughout the country, but at these no lectures are delivered.

### STATE MEDICINE OR PUBLIC HEALTH.

#### *Certificates or Degrees.*

Examining Body and Degrees	Age	Preliminary Requirements	Number of Examinations	Fees	Remarks
University of Cambridge, certificate ..	21	Licence to practise	2	£ s. 8 8	—
University of London, certificate ....	22	M.B. 1 year	1	5 0	Subjects:—Chemistry and microscopy, meteorology, geology, physics and sanitary apparatus, vital statistics, hygiene, sanitary law
University of Durham, certificate ....	—	Licence to practise	1	5 5	One course of lectures on the subject at the University is compulsory
University of Edinburgh, B.Sc. in Public Health ..	—	Degree in medicine	2	10 10	Two courses at the University compulsory
D.Sc. ditto ..	—	B.Sc. P.H.	Thesis	5 5	One year of practical sanitation at B.Sc. P.H.
University of Glasgow....	—	Licence to practise	2	8 8	One <i>annus medicus</i> must be passed in Glasgow
Royal College Physicians, Edinburgh, certificate ..	—	Qualification in medicine	2	10 10	—
University of Dublin ....	—	M.D.	1	—	—

### VETERINARY EDUCATION.

By the Veterinary Surgeons Act, passed last year, the profession receives safeguards similar to those which protect the practice of pharmacy, of medicine, and of dentistry.

All practitioners of veterinary surgery, or of any branch thereof, must hereafter be registered on the Register of Veterinary surgeons. The register of members of the Royal College of Veterinary Surgeons is constituted the official register. Two classes of practitioners are recognised by this Act—(1) members of the College, which is made to include all persons who hold a recognised veterinary diploma, and (2) "existing practitioners," who must have practised veterinary surgery for not less than five years before the passing of the Act, and must apply for registration within one year. After the last day of December, 1883 it will be illegal for unregistered persons to assume the



title of veterinary surgeon, or of any other title stating that he is a practitioner of veterinary surgery.

The Royal College of Veterinary Surgeons grants the titles of member and fellows. Candidates for membership must have gone through a three years' course at one of the veterinary colleges mentioned below, and pass three examinations (fee in each case three guineas). If the candidate is successful, he is registered as member—M.R.C.V.S., registration fee one guinea.

The candidate for fellowship must produce a certificate signed by three fellows as to his status in the profession, and of his having been in practice not less than five years; he must undergo an oral and written examination: fee on election, 15 guineas.

The following are the veterinary schools:—

ROYAL VETERINARY COLLEGE, *Cumden Town, London.*  
ROYAL (DICK'S) VETERINARY COLLEGE, *Clyde Street, Edinburgh.* (Fees, 32l. 15s. 6d., in instalments.)  
NEW VETERINARY COLLEGE, *Gayfield, Edinburgh.* (Fees, 16 guineas, in advance.)  
VETERINARY COLLEGE, *Buccleugh Street, Glasgow.*

### SCIENTIFIC EDUCATION.

EVERYONE conversant with the subject will know that it is impossible to give even a brief summary of the means of acquiring in England a scientific education. We follow, therefore, our plan of previous years, and give somewhat detailed accounts of the constitution of a few educational establishments.

#### MASON'S SCIENCE COLLEGE.

##### *Birmingham.*

This was founded by Sir Josiah Mason, Knight, on February 28, 1875, and opened on October 1, 1880. The munificent founder died on June 6, 1881. His primary object, described in a deed dated December 12, 1870, was to promote "thorough systematic education and instruction, specially adapted to the practical, mechanical, and artistic requirements of the manufactures and industrial pursuits of the Midland district, and particularly the boroughs of Birmingham and Kidderminster, to the exclusion of mere literary education and instruction, and of all teaching of theology and of subjects purely theological." The founder expressly declared that regular systematic instruction should, as far as possible, include the following subjects, viz.:—Mathematics, abstract and applied physics, both mathematical and experimental; chemistry, theoretical, practical, and applied; the natural sciences, especially geology and mineralogy, with their application to mines and metallurgy; botany and zoology, with special application to manufactures; physiology, with special reference to the laws of health; and the English, French, and German languages. By another deed of 1874, anatomy and the Greek and Latin languages were added to the list, and on February 23, 1881, provision was made to enable the trustees to take all necessary steps, including extension of the curriculum, to affiliate the college with the newly-created Victoria University. The college is to be open to all without distinction of creed, race, class, or sex. How the intentions of the founder have been carried out we learn from the Mason's Science College Calendar.

Students under 16 must pass a preliminary written examination in elementary mathematics and English, and a  *viva-voce*  examination in either Greek, Latin, or French. Those over 16 are admitted without examination. There is already a reference library of more than 10,000 volumes, and a really fine geological museum.

There are day and evening classes in nearly all the subjects mentioned in the trust-deed. The charge for the day-classes is generally 3l. 3s. to 4l. 4s. a session of three terms; for the evening classes 10s. a term. Artisans and teachers at elementary schools are admitted to the latter at half-price. Students may enter for single classes, and are invited to consult with the professors as to their best course of study. Applications for admission must be made to the secretary, and fees must be paid in advance. The next winter term begins on October 3.

A special feature of the courses is the prominence given to practical work. Weekly geological and botanical excursions are arranged during suitable weather, and the Chemical Professor, Dr. Tilden, was able last year to conduct his students over various technical works in the neighbourhood.

#### THE CITY OF LONDON COLLEGE

Was founded in 1848, at the Crosby Hall, by the Rev. Charles Mackenzie, to provide for the young men of the metropolis familiar instruction in the languages, arts, and sciences. It is now established at Sussex Hall, 52 Lodenhall Street, E.C., and has more than 1,200 pupils. The Queen is the patron, and the list of vice-patrons includes the Primate and the Premier, with many of the nobility. The list of classes, all held in the evening, includes languages as far as Hindustani and Dutch, writing, shorthand, music, as well as the sciences, and bookkeeping. The fees vary from 4s. 6d. to 9s. a term, according to the abstruseness of the subject.

#### THE BIRKBECK LITERARY AND SCIENTIFIC INSTITUTION, *Southampton Buildings, Chancery Lane.*

This was founded in 1823, and continues to provide popular instruction in almost every subject, including the London University B.A. and Matriculation, and those examined by the Science and Art Department. There are classes in botany and chemistry, theoretical and practical. Full information can be obtained from the secretary.

At the Working Men's College, Salford, there are classes in chemistry, physiology, calico bleaching, printing, and dyeing.

At University College, Aberystwyth, a course of lectures in the forenoon, on inorganic and organic chemistry and physics, will commence on September 18. Fee for the whole course, 10l.

The Royal College of Science, Stephen's Green, Dublin, has complete courses in botany, chemistry, and other sciences.

### THE SCHOLARSHIPS AND COUNCIL PRIZES OF THE PHARMACEUTICAL SOCIETY OF GREAT BRITAIN.

#### THE BELL SCHOLARSHIPS.

THAT these prizes are not so well known as they deserve to be is evident from the fact that the number of competitors is usually very small, and that queries are so often found on the subject in the correspondence of our journals and periodicals.

All registered apprentices or students of the Society are eligible to compete, if under 22 years of age, and if they have passed not less, or been engaged for not less, than three years in the pharmacy of a registered pharmaceutical chemist or chemist and druggist.

Candidates are required to give notice to the Registrar of their intention to compete, and also to send certificate of age, together with testimonials from their previous employers or masters as to capability, industry, and general conduct, on or before the 1st day of June.

The examination is wholly in writing, and is conducted by two members of the Board of Examiners under the same conditions as the "Preliminary," and takes place on the 12 Tuesday in July, occupying about five hours, viz., from 12 A.M. to 3 P.M. and from 4 P.M. to 6 P.M.

Two scholarships are awarded annually, and come into operation at the commencement of the session in October, the Pharmaceutical Society's school being that in which the holders of the scholarships shall pursue their studies.

The annual value of each scholarship is 30l., and is held for one year, the successful candidate receiving this sum in two moieties: the first on entering upon his studies in the school, and the second at the expiration of five months; the Council also provide free laboratory instruction and admission to the lectures, and Mr. T. H. Hills gives a prize of books of the value of 2l. 10s.

The subjects of examination are:—(1) Latin: Virgil, the first three books of the *Æneid*, Latin prescriptions, translations of Latin into English and English into Latin, translations from any Latin pharmacopœia, and parsing. (2) French or German. (3) English: Composition and parsing. (4) Arithmetic: The first four simple and compound rules, vulgar fractions, and decimals; the British and metric systems of weights and measures. (5) Elementary chemistry. (6) Pharmacy. (7) Botany. There is one more subject on which great stress is laid by the examiners, and for which marks are awarded when neat and legible, viz., writing. It would be well for each candidate to read what the examiners in 1880 and 1881 had to say on this subject.

For further details and information regarding these scholarships reference may be made to the calendar issued by the Society, or application may be made to the Registrar for a copy of the pamphlet entitled "Regulations for Examination."

Intending competitors will find that their studies will be greatly facilitated if they draw up a kind of time-table, made so that each day shall have its subject or subjects, and arranged according to the time at their disposal, and also in accordance with their several needs.

The books which are required to be read will vary considerably, and depend very much on previous work and the extent of the student's knowledge in the set subjects.

Presuming that the student has a little acquaintance with most of the subjects required for this examination, the following list of books and suggestions will aid him in choosing the right materials with which to work.\*

*Latin*.—Smith's "Principia," Parts I. (3s. 6d.), II. (3s. 6d.), IV. (3s. 6d.); Smith's "Student's Grammar," 6s.; "The Public School Latin Primer," 2s. 6d.; Edward's "Eton Latin Grammar," 3s.; Arnold's Henry's First (3s.) and Second

\* The prices of books attached may not be in all cases quite accurate, but they are very nearly so.



(4s.) Latin Reading books; Arnold's (6s.), Anthon's (5s.), Kennedy's (8s. 6d.), or Freund's Virgil (Æneid), and a small copy of the Æneid for the pocket; White's Æneid, I.-III., Oxford Classics, 1s.; such Latin pharmacopœias as of London, Edinburgh, and those of foreign countries where they are written in Latin, as the German, Hamburg Codex, &c.; "Selecta e Prescriptis," 5s.; Britten's "Dispenser's Vade Mecum," 2s. 6d.; Ince's (4s.) or Cooley's (5s.) Pharmaceutical Latin Grammar; Smith's Latin Dictionary, 7s. 6d., and a larger work, such as Ainsworth's (Beaton and Ellis', 10s.), which contains Latin words less classical than those contained in Smith's. Cæsar's First Book of the Gallic War may occasionally be read. Davidson's translation of Virgil, 3s. 6d. (Bohn's Library), will be of assistance in obtaining the true meaning of obscure passages contained in the Æneid. It is a good plan to make a vocabulary of the words which occur in reading Latin, and note any peculiarity about them, the right declension, gender, &c. of a noun, adjective, or pronoun, and a correct knowledge of parts of a verb and their meanings; great attention should also be paid to the reading of abbreviated and unabbreviated Latin prescriptions, and translating English ones into Latin.

*French.*—Caron's (2s.), Delille's (5s. 6d.), De Fivas' (3s. 6d.), or Cassell's (4s. 6d.) French Grammar; Hall's First (1s. 6d.) and Second (1s. 6d.) French Course; Constans's Dictionary, 7s. 6d.; and such reading-books as Delille's Répertoire des Prosateurs Français (6s. 6d.), and his Modelles de Poésie Française (6s.); Fénelon's "Télémaque" 2s. 6d.; the Plays of Molière, 6d. each; and Voltaire's "Histoires," 3s. 6d. each; N. B. Saintine's "Picciola" 3s. 6d.; French Codex, 10s. 6d. A short paragraph (prose or poetry) is generally given, from any source; and, as a rule, is not remarkable for its difficulty. This year a paragraph was taken from the French Codex, being part of the directions for making Huile Phosphorée. Sometimes the candidate is required to translate a short English passage into French.

*German.*—Ahn's German Course, 3s.; Otto's Grammar (5s. 6d.) or Sach's (3s.); Oswald's "German Poetry for Schools," 2s.; Elwell's (6s.), Feller's (3s. 6d.), Williams' (3s. 6d.), or Köhler's (8s. 6d.) Dictionary. A knowledge of either German or French is required; marks are, therefore, only awarded for one. The latter is generally taken, it being popularly thought that its study is easier.

*English.*—Mason's Grammar and Analysis, 3s.; Sullivan's Grammar, 1s.; Chambers' Etymological Dictionary, 4s.; Nattall's Pronouncing Dictionary, 2s. 6d.; Morell's English Composition, 3s. In this subject a short paragraph to parse, and an essay on some well-known topic are given.

*Arithmetic.*—Barnard Smith's (4s. 6d.) is undoubtedly the best; and, for the metric system, that contained in Attfield's Chemistry and Squire's "Companion" will be found sufficient.

*Chemistry and Physics.*—Attfield's (15s.), Fowne's Vol. I. (8s. 6d.), Vol. II. (10s. 6d.); Roscoe's "Elementary" (4s. 6d.), Buckmaster's (3s. 6d.); Galloway's "Qualitative Analysis," 8s.; Miller's "Chemical Physics," 16s. (Vol. I. of "Elements of Chemistry"); Ganot's Physics, 15s.

*Pharmacy.*—Mohr and Redwood's "Practical Pharmacy," 12s. 6d.; Procter's "Practical Pharmacy," 12s.; British Pharmacopœia, with additions, 6s.; Squire's "Companion to Pharmacopœia," 10s. 6d. It is very important to know the processes for making the pharmaceutical and galenical preparations in the B.P.

*Materia Medica.*—Hanbury and Flückiger's "Pharmacographia," 21s.; Bentley and Redwood's "Materia Medica" (Pereira), 25s.; Néligan's "Medicines," 18s.; Royle's "Materia Medica," 15s.; Garrod's, 12s. 6d.; French Codex, 10s. 6d.; Dorvault's "L'Officine," 30s.

*Botany.*—Bentley's "Manual," 14s.; Cook's, 1s.; Oliver's, 4s. 6d.; Bentham's "Flora," 12s. 6d.; Haywood's "Botanical Pocket-book," 4s. 6d.; Holmes' "Botanical Note-book," 3s.; Lindley's "School Botany," 5s. 6d.; Babington's "Manual," 12s.; Masters' "Elementary Botany," 3s. 6d.

In reference to the study of chemistry, pharmacy, materia medica, and botany, it is advisable to be as practical as possible. In the case of materia medica a cabinet could easily be made, or in lieu one of Evans' or Southall's could be bought, and for botany, plants, particularly those official and indigenous ones which are of a poisonous or otherwise

important nature, should be collected, pressed, dried, and mounted, or instead Woolley's Herbarium may be used. It may be well to state that as far as these subjects are concerned they are in harmony with those required for the Minor and Major examinations, but of a more elementary character.

*The Council Prizes.*—These are offered for competition at the end of the session. All pharmaceutical chemists who were Associates of the Society at the time of passing the Major examination are entitled to compete, provided that they inform the Secretary of their intention to do so five days before the day on which the examination takes place. This is generally towards the end of July, when all the ordinary meetings of the Board of Examiners in London and Edinburgh are over. It is a written examination, and is held in London and Edinburgh; the questions are set by two members of the Examining Board, selected by the Council; candidates are required to number their papers or adopt a motto; six hours are allowed for answering the questions set. The prizes are as follows:—

1st Prize: Pereira medal, in silver, and a present of books, value 5*l.*, or thereabouts, given by Mr. T. H. Hills, in memory of Jacob Bell. (This medal was founded in 1861 in memory of the great pharmacologist Dr. Pereira.)

2nd Prize: The Pharmaceutical Society's medal, in silver, and a present of books, value 3*l.*, or thereabouts, given by Mr. T. H. Hills, in memory of Jacob Bell.

3rd Prize: The Pharmaceutical Society's medal, in bronze, and a prize of books, value 2*l.*, or thereabouts, given by Mr. T. H. Hills, in memory of Jacob Bell.

(The last two were founded in 1876, soon after the examiners discontinued the classification in two divisions of the successful candidates at the Society's examinations, and when the 1*l.* prize of books, which was given to the candidate at each Minor examination who passed highest in the first division of the pass-list, was discontinued.)

The subjects are materia medica, botany, and chemistry (including chemical physics), which are exactly the same as in the Major: judging from the nature of the questions which have been set for the Pereira medal since 1861, and the other medals since their foundation, it is evident that a more advanced knowledge is required of these subjects than is sufficient for the Major, and the standard, too, is higher, as is shown by the fact that although there were ten competitors in 1881 no award was made.

As part of the Major is of a practical nature, so the questions at this examination partake of a practical character also. It is very advantageous to the candidate if he knows how to do, and has practically done, such operations as the assaying of cinchona barks, opiums, and other potent and important drugs, the examination of ordinary commercial chemicals, and has had some general experience in analytical and synthetical chemistry. A knowledge of the source, nature, and properties of "new remedies" is useful, and a thorough acquaintance with the characters, &c. of the more familiar articles of materia medica, such as ergot, myrrh, ipecacuanha, aconite, senna, acacia and other gums, jalap, scammony, guaiacum, and their resins is indispensable.

With regard to books, those in common use for the Major will be found sufficient; besides those named under the head of scholarships may be mentioned:—In Chemistry and Physics, Miller's Vol. II. (2*l.*), Vol. III. (3*l.* 6d.); Fresenius' "Qualitative Analysis" (12s. 6d.), and "Quantitative" (15s.); Roscoe and Schorlemmer's Chemistry, Vol. I. (2*l.*), Vol. II. Pt. I. (18s.), Pt. II. (18s.); Schorlemmer's "Chemistry of Carbon Compounds," 14s.; Bloxam's Chemistry, 16s.; Sutton's "Volumetric Analysis," 16s.; Strecker's "Organic Chemistry," 2*l.*; Wittstein's "Pharmaceutical Chemistry," 6s.; "Handbook of Chemical Technology" (Wagner), 25s.; Tilden's "Chemical Philosophy," 4s. 6d.; Deschanel's Physics, 18s.; Arnot's Physics, 12s. 6d.

Reference may with advantage be made to such larger works as Gmelin, Watt (14*l.*), Ure (9*l.* 6d.), and Brande, (6*l.* 3s.).

*Materia Medica* (see "Scholarships").—Pereira's large work, 3*l.* 15s.; 3 volumes.

*Botany* (see "Scholarships").—Sacci's, 21s.; Thome's, 6s.; Macnab's, 1s. 6d.; Balfour's "Classbook," 2s.; Bentley and Trimen's "Medicinal Plants," 11*l.* 11s.; Henfrey's Botany, 15s. Special attention should be paid to physio-



logical and systematic botany (the "major" orders and those which closely resemble them). Periodicals bearing on this and the preceding subject will give the most recent information.

In all the above subjects advantage may be taken of the syllabus of lectures delivered at the Society's school (see Calendar) which will be a kind of guide to the direction in which a student can work.

**Botanical Prize.**—A silver Council medal is annually offered for the best herbarium, collected in any part of the United Kingdom, between the first day of May and the first day of June in the following year, and should there be more than one collection possessing such an amount of merit as to entitle the collector to reward, a second prize, consisting of a bronze medal, and also certificates of merit, are given at the discretion of the Council. No award is made if sufficient merit is not shown. Competitors must be connected with the Society and under 21 years of age; some recognised work on systematic British botany being followed (such as Babington, 10s. 6d., or Hooker, 10s. 6d.), and the collection is to consist of phanerogams and ferns arranged according to the natural system of Decandolle (or any other natural method in common use), accompanied by arranged lists with the species numbered. Each plant is to be named, and habitat, date of collection also to be stated on the paper on the paper on which it is preserved. A certificate, signed by the collector and his employer, or a pharmaceutical chemist to whom the collector may be known, to the effect that the collection was made within the required interval of time, and without any assistance than that from books, is also to be sent to the Registrar. The merit depends on the number of specimens rightly named, together with their rarity and manner of preservation. They must be forwarded to the Registrar, 17 Bloomsbury Square, on or before the first day of July, properly endorsed.

When the student has decided which of the above works he will follow, it will be advisable for him to begin early in his apprenticeship to acquire a knowledge of elementary botany, such as the names and functions of the various parts of plants, and also to enable him to describe accurately in botanical language their characteristic appearance.

The botanical collector requires such instruments as a pocket-lens, pair of scissors, a few dissecting-knives, mounted needles, small trowel or spud (may be bought in a leathern sheath), and a tin box, popularly known to botanists as a "vasculum," the size of which will vary according to the requirements of the collector; or, in place of this, a couple of eau de Cologne boxes, with the lids and partitions removed, joined in book form by means of American-cloth hinges, and lined internally with oil-silk, will do very well. In collecting plants fine weather is to be preferred, specimens should be good ones, and beginners should collect two, one being for examination and the other for pressing. The plant should be collected *whole*, and when in flower, and if any parts are wanting, such as fruit or radical leaves, they must be collected at some other favourable time. When the flowers are delicate, and quickly crumple when plucked, it is best to press them at once in an old book used for the purpose.

In pressing plants place them on a table and arrange them as naturally as possible quite flat, and hold them in this position for a few minutes by placing coins on the leaves and other parts. Then transfer to drying-paper, which may be that sold specially for the purpose, and to be obtained cut in any size from Newman, 32 Botolph Lane, London (price varying from 15s. to 30s. ream), or ordinary white blotting-paper, or stout brown-paper, or even newspapers. This paper, containing the carefully-placed plants, is then put between two stout boards under a press, which may be a letter-press, large weights, a large stone with a ring to lift it up, with, or a number of smooth building-bricks neatly wrapped in paper or baize. The last is preferred, being of little expense, and as it can be put in a small corner and the weight readily increased or decreased according to the pressure required. For the first few days it is necessary to change the paper often, and dry it well before using again, four or five sheets being always placed between each plant. When fresh plants are put in the press with others which are nearly dry they should be separated by means of cardboard. No time must be lost during the process of drying. Mounting the dry specimens is done by means of gummed-

paper or glue of a creamy consistence, or French glue, or by means of twine or strips of gummed-paper. The paper on which to mount them should be white cartridge-paper, demy size, which can readily be obtained from any stationer. Reference may be made to a method adopted by Mr. Higginson, which will be found in the 1880 volume of *THE CHEMIST AND DRUGGIST*, page 136. A neat method is to use a strong mucilage made from white gum arabic, and to which a very small quantity of syrup or glycerine has been added; this is applied to the back of the leaves and other expanded parts, taking care that the gum does not show beyond the edge of the leaf, and press until quite dry; then for the stems and other stronger parts make a hole on each side of the part to be fastened, and pass the ends of a thin strip of paper through them and gum at the back of the sheet of paper: the "trimmings" of ordinary slip and dispensing labels may be thus used. When quite dry, all the specimens should be painted over with an alcoholic solution of corrosive sublimate (2 drachms to 1 pint) or with the mixture which is used at Kew (1 oz. corrosive sublimate, 1 oz. carbolic acid, and 2 pints methylated spirit). This poisons the plant and protects it from the ravages of such insects as *Anobium castaneum*. The name of plant (popular and botanical), order, division, and class, with habitat, date of collection, and any short note which may be required, should be attached to the bottom corner on the left hand of each sheet. Printed labels are sold for this purpose, or they can be obtained, according to the design of the collector, from Silverlock.

When the collection is large it is advisable to have a cabinet made, with a tight-fitting door to keep out dust, and arranged inside with pigeon-holes; the plants can then be put together, according to class, division, and order, in lots, between pasteboards, or in stout paper bags, or thin pasteboard cases. In place of a cabinet they may be bound in the form of a book, made so as to open flat, and in every case the plants mounted should be handled with care and kept in a dry place.

## Note of Novelty.

### A UNIVERSAL POCKET MICROSCOPE.

POCKET microscopes are not uncommon, but one which we have received from Mr. Paul Waechter, of Berlin, is a remarkable one. It is perfectly achromatic, and the images produced by it are wonderfully clear. Although the little instrument only magnifies to 50 diameters, yet diatoms, those minute silicious vegetable organisms which require a good glass to bring out the markings, appear wonderfully



clear when examined through it. Mr. Waechter, whose whole business is devoted to the manufacture of microscopes, offers this special one for the very low price of 6s. The complete apparatus includes an extra botanical lens, and a neat case, as represented in the engraving. We think anyone who wants such an instrument will be satisfied with the one offered by Mr. Waechter.



## Exchange Column.

ADVERTISERS IN THE EXCHANGE COLUMN will find it very much to their advantage to draw up their announcements so that they will fall naturally into one of the divisions into which the advertisements are grouped.

We would also suggest that those who avail themselves of the Disposal section will be wise to define, with some approach to detail, what they have to sell. Probable purchasers are too busy, in most cases, to enter into preliminary correspondence, which is likely enough to have no ultimate result.

### Dental and Surgical.

Set of 19 stopping and scaling instruments (in ivory handles), fitted in leather case with spring lock, lined with velvet, almost equal to new; price 35s. George C. Smith, 342 High Street, Stratford, London, E.

### Drugs and Chemicals.

Ol. eucalypti, genuine, 5s. 3d. lb. Thornby, Chemist, Moss-side, Manchester.

7 oz. ol. lavand. ang., 10s. an ounce. Laidlaw, Chemist, Denny, N.B.

Effervescing saline, well dried, in bulk at 1s. per lb.; formula and samples on application. 217/13.

About 1 cwt. pulv. aloes soc. opt., 2s. 3d. lb.; 28 gum olibanum guttæ opt., 7d. lb.; sample, two stamps. 217/28.

Super essence lemon, four 30-lb. coppers, 8s. 6d. lb.; Jamaica beeswax, oil rose geranium, otto ditto rose, manna cakes (9s. gross), pulv. and rad. gingers, bale good hops, case Chinese vermilion, ol. menth. pip., acetic acid, cloves, cod-liver oil, Soy, burnt sugar. R. Sowerby, Middlesborough.

### Proprietary Articles.

Offers wanted for a quantity of Myers' cattle spice. Walker, Chemist, Burnley.

Surplus stock of patents to be disposed of, in fair condition, and very cheap. Send for list to 215/6.

Any reasonable cash offer accepted. See list (Proprietary Articles) last number. T. Woodend, 22 Pitt Street, Liverpool.

Myer's Royal cattle spice, surplus stock, quite fresh and good, from  $\frac{1}{2}$  cwt. upwards, 25s. per cwt., carriage paid; exchange drugs. 216/36.

Offers wanted for the whole or part of following:—3 2s. 9d. Williams' Ponterdawe worm lozenges, 4 1s. 1½d. Brandreth's pills, 4 4s. 6d. hydroleine, 2 4s. 6d. Rook's pills, 1 2s. 9d. Denoual's injection, 5 2s. Dacey's Duffy's elixir, 3 1s. 1½d. Morrison's ointment, 6 1s. 1½d. Mather's family life pills, 6 1s. 1½d. Chinese pills, 2 1s. 1½d. Bostock's anti-scorbutic ointment, 3 1s. 1½d. Torrens' pills, 5 1s. 1½d. Stanton's cough pills, 3 1s. 1½d. Wesley's pills, 2 1s. 1½d. Nurse Lilly's pills, 1 1s. 1½d. Virginia gums; all in good condition; will exchange for other patents. Apply, A. Ellis, Chemist, Skelton, Marske-by-Sea.

### Apparatus.

Oil cistern, excellent condition, 5 feet high, 26 inches diameter, one tap; smaller cistern, two taps; what offers? Walker & Son, Maidenhead.

Walker's self-regulating vulcaniser, and two flasks, in perfect working order; lowest cash price, 3l. 2s. 6d., including packing-cas. J. Potts, 58 Tatham Street, Sunderland.

Maw's electro-magnetic machine, almost new, cost 25s.; going abroad, will take 15s. Chemist, 51 Fore Street, Totnes.

### Educational.

All Questions asked a recently-successful Minor Candidate, 1s. 217/21.

Botany.—The indigenous official plants mounted on paper 5½, on cardboard 7s. 6d.; wild flowers 7s. 6d. per 100. Higginson, Newferry, Birkenhead.

Lot of useful chemical apparatus, reagents, and small cabinet for sale in whole or part; any reasonable offer taken, or in exchange tooth instruments. Whiteley Robinson, 15 Promenade, Bridlington Quay.

A bargain.—Binocular compound microscope, with mechanical stage, nearly new, having been used only a few times, height 16½ inches, all closed down, price 7l., with  $\frac{1}{2}$  and 1 inch objectives, stand condenser, live box, &c., in mahogany case. F. Walton, 7 Corn Market, Derby.

Set of illegible autograph prescriptions (original), 2s. 6d.; 30 prescriptions (catch and difficult) given to dispense at Minor during past 12 months, 2s.; 50 questions asked of successful students at last Minor, 1s. 1d.; lot of cheap, almost new, books. Stamp for list, Saunders, 130 Camden Road, N.W.; note change of residence.

### Literature.

Bentley's "Botany," 3rd edition, good as new, 6s. 9d. Collett, High Street, Nantwich.

120 copies *Chemist and Druggist* (nine years, complete), price 20s. Moore, Skipton.

Offers wanted for last eight years' *Chemist and Druggist* unbound. Bowen, Chemist, Kilburn.

Last four volumes of the *Pharmaceutical Journal*, unbound, five numbers missing, 10s. E. P., 180 New Bond Street, London, W.

The *Chemist and Druggist*, unbound, from 1874 to August, 1882, only three numbers missing; what offers? E. Blades, Womhwell, Barnsley.

The "Imperial Dictionary," English technological and scientific, with supplement, by John Ogilvie, LL.D. (2 vols.), 2,500 engravings, new, cost 4l., will sell for 30s. 16/16.

### Soda-water Plant.

Soda-water machine, bottles, and every appliance, cheap. Chemist, 1 Commerce Terrace, Kingston Road, Wimbledon.

Gas-engine, second-hand, in fair condition, suitable to drive soda-water machine. Particulars, N. G. Wilcocks, Bath.

Soda water machine, American principle, by Davenport, almost as good as new; a bargain; second hand. Particulars, N. G. Wilcocks, Bath.

Barnett & Foster have some second-hand soda-water machinery of their own make for sale. Apply 23r Forston Street, Shepherdess Walk, N.

Soda-water machine, with gasometer, by Barnett, Son & Foster, London, No. 2, in perfect order; good as new; will be sold a bargain. Edinburgh and Leith Aerated Water Company, Edinburgh.

### Shop Fittings.

Twelve-gallon show-bottles, York glass. 218/5.

Two 6 gallon carboys. Crocker, East Dulwich, London.

Mahogany soda-water stand with handsome marble top, cheap. 218/30.

Four handsomely-labelled show-jars, with gilt glass caps, condition equal to new; height 23 in. Bowen, Chemist, Kilburn.

Two show-jars, gilt-glass covers, 3½ in. to top 46 in. circumference; two circular mahogany stands, 4l the lot, or exchange. Patents or drugs, Nurtlen, 390 Strand, London.

What offers for eight mortars and pestles, new, all or part: No. 7, 4s.; 8, 5s.; 9, 6s.; 10, 7s.; 11, 8s.; 12, 9s. 6d.? 23 Stone Street, Dudley.

Show carboys: Nine 34½-inch circumference, four 31-inch, two straight 9-pint, three ditto 6-pint; for cash, microscope, or coil and battery. Marks, Chemist, Wantage.

Fifty mahogany-fronted drawers, shelves, glass cases, window-cases, counters, dispensing-screen, carboys. List sent. Waites, Chemist, Rotherham.

Mahogany counter-case, Maw's fig. A3, 3 ft. by 12 in., 8 in. high, sloping shelf, bottom lined good paper; good condition; offers. Davies, Chemist, Rhyl.

Four dozen ½-gallon black store hottles, japanned caps, gold labels, in good condition, to be sold, at Mr. Baldock's Pharmacy, South Norwood, S.E. Must be fetched away. Offers wanted.

Cheap.—One 12-ft., 8-ft., and 6-ft. nests of drug-drawers, about 500 feet of mahogany-edged shelving, desk and case, three counters, two surgeon's cabinets, long warehouse-counter, filled with drawers, two surgeon's cabinets, one dispensing-counter; must be cleared out. B. & G., 22 Gun Street, Brushfield Street, Bishopsgate, London.

Pillar dispensing-scales, brass pans, strings, 8s. 6d.; tin oil-measure and funnel-stand, 2l by 13 in., painted, 2s. 6d.; hook-slate, three slates, 1s. 4d.; white slate, 1s.; Maw's sample-case, 7s. 6d., holds eight ½-oz. bottles, stoppered, nearly new, 3s. 9d.; pill machine, mahogany frames, 30 5 grain drawers attached, 10s. 6d. B. Wood, New Pelton, Halifax.

Nests of drawers, Spanish mahogany fronts, dovetailed, four rows small, two rows of large, with stained deal bins underneath, 12 ft. 9 in. long, 3 ft. 1 in. high (bins under), 11 in. back to front, 84 small drawers, 30 large, price 10l.; other nests of shorter lengths; also counter glass cases, tooth-brush case, No. 9 Maw's list shop-bottles and pots, &c.; to be sold a bargain. Apply to Mr. Merriek, Castilian Street, Northampton.

Second-hand fittings.—Two handsome mahogany carboy pillars, 16-in. bases, carved caps, fluted columns 48½ in. high, 7l., nearly new; plate-glass fascia, embossed, gold letters, black ground, "Pharmaceutical Chemist," 146½ in. hy 14 in., 3l. 10s., nearly new; mahogany external doors, plate-glass, and shutters, 8½ in. hy 48 in., 3l.; surplus odd jars, 16 2-lb. lilac, 1l; 21 1-lb. drab, 13s.; 34 8-oz., 15s.; 25 4-oz., 7s. 6d.; 18 8-oz., white 6s.; 28 4-oz., white, 5s. W. Hawke & Son, Wild Court, Great Wild Street, London, W.C.

A lot of large globes, 10 gallons and larger, to sell about 9d. per lb., selling price 1s. 4d. per lb.; about 100 globes of every size, from 2s. each; a lot of specie-jars at about 35 per cent. usual price; dispensing-screen, about 5 ft. 6, good mirror centre, 5l. 10s.; one 5 ft., 95s.; dispensing-screen, 8 ft., about 9l.; about 10 dispensing-cases, all sizes; wall-case, 9 ft. long, 9 ft. high, 125s.; mahogany wall-case, 6 ft. long, 9 ft. high, 10l.; pine wall case, 8 ft., painted, 8 ft. high, 8l.; new desk and case, very handsome, 45s.; a large lot of bent cases from 20s.; part of a shop, 12 ft. long mahogany drawers and glass noddies, about 10l.; lot of extract-jars and ointment-jars; mahogany case, 30 by 13, 13s.; a lot of good cases too numerous to enumerate. All information on application to R. Tomlinson, 15 St. Paul's Square, Birmingham.



No reasonable offer refused for "You Dirty Boy," full size, equal to new. Harvey, Margate.

What offers for a lot of white-glass stoppered shop-rounds? Richard H. Treweeks, Chemist, Pembroke.

Maw's  $\frac{1}{2}$  gallon tincture-press; five polished mahogany boxes for homoeopathic bottles, quite new; a bargain. "Alpha," 58 Lewis-ham High Road, S.E.

2,000 4, 8, 20, 30, 40, 60 oz. new gold-labelled stoppered shop-bottles, engraved acid-bottles, &c.; 1,400 4-oz., 8-oz.; 116 2-lb., 4 lb. blue and olive shop-jars; 60 2 and 4 lb. lozenge jars, gilt caps, gold labels; 50 7-lb. lozenge and powder jars, japan tops, gold labels; 150 handsome show-jars, with gilt covers, gold labels, as fig. D Maw's; 120  $\frac{1}{2}$ -gallon, 1-gallon carboy-shape and upright black glass store bottles, gilt and japan caps; 3 dozen 7-lb. brown ointment jars, japan covers; 21 gold-labelled store boxes, 80 complete mortars and pestles, large iron and marble mortars and pestles, scales, pill machines, pear-shape carboys, from 2-gallon up to 16-gallon, specie-jars. Lloyd Rayner, 333 Kingsland Road, London, N.

50 handsome retail and dispensing counters, all lengths; Treble's handsome dispensing counter and screen, 12 ft. 6 long, fitted complete; dispensing screens and cases, 3 ft. 6 to 10 ft. long; five upright cases, with desks; handsome counter show-cases, as fig. A 1, A 3, A 4, A 5, A 6, A 8, A 9, A 10, A 13, A 15, A 18; show-stands, A 38, A 40; sponge-cases, A 41, A 43; soda-water stands, A 57; quantity shop-drawers, shop-fittings, as A 82, A 84 Maw's list; handsome wall-cases, from 2 ft. 6 up to 20 ft. long, as A 86, A 87, A 88; shop lamps and brackets, as fig. 1, 3, 5 Maw's list; and every description of shop-fittings, show-cases, utensils required by the trade. Lloyd Rayner, 333 Kingsland Road, London, N.

Entire fixtures, handsome, nearly new large chemist's shop, made by Treble & Son; Spanish mahogany shop-drawers, with gold labels, cut-glass knobs, gilt backs, mahogany lockers under, mahogany moulded coverboard on top; Spanish mahogany panelled and moulded cupboards, with mahogany moulded overboards on top; mahogany-faced shelving, with mahogany moulded cornice, to go round shop; 23-ft. 6 in. long mahogany moulded-top counter, with panelled and moulded polished pine front, pilasters, &c., fitted with counter drawers; 12-ft. 6 in. long handsome dispensing-counter, mahogany moulded top, with polished-pine panelled and moulded front, pilasters, &c., fitted at back with drawers, shelves, cork-presses, gas-fittings, &c., with handsome plate-glass dispensing-case, screen on top, with movable shelves enclosed, with carved tablet on top, written in gold "Dispensing Department," fitted at back with shelves for dispensing-bottles; 2-ft. 6 in. long mahogany upright plate-glass case, with desk; 9-ft. 6 in. long mahogany bent plate-glass counter case; two 12 gallon pear-shape carboys, cut-glass stoppers, with stands; two 30-in. specie-jars, Royal arms, with stands. These fittings will be altered to suit any sized shop. Lloyd Rayner, 333 Kingsland Road, London, N.

#### Miscellaneous.

Enamelled-iron pan, with steam jackets, about eight gallons; offers requested. Badcock, Lymington.

Cars: sound, good condition, and cheap, various sizes. Full particulars from H., 70 Monier Road, Old Ford, London.

Cremona violin, Strad. copy, fine condition, case and bow, only 25s., approval. Riley, 268 New Liverpool Street, Salford.

Thirty good sound seed-bags, holding from 1 to 2 cwt., clean, 5d. each, lot for 10s. 6d. W. Kemp, Chemist, Horncastle.

111 1-gallon tins, two 10-gallon, and one 3-gallon, having contained McDougall's carbolic acid; all in good condition; price 17. W. H. Willson, New Shoreham.

White flint-glass retort, for rectifying strong acids, for laboratory purposes, holds 16 quarts, very little used; what offers? Samuel Oldham, Druggist, Motham, Manchester.

*Chemist and Druggist* for years 1875, 1876, 1877, 1878, 1879, 1880, unbound and good condition, 8s. each, 42s. the lot; two dozen store bottles, fig. 89, Maw's list, black caps, 15s. per dozen. Hndson, Chemist, Wakefield.

Six Winchester; capicum oil, intensely, not brilliantly, red colour, no use to owner; offers wanted. First-class Irish water-spaniel dog; highest pedigree, capital water dog; 3l. only; to good home. Hay, Chemist, 4 Regent's Terrace, Hull.

Oxymel scillæ, Parrish's food, Dinneford's magnesia, Ladd's tincture-press, pot. bromid., effervescing saline, 25-gallon spirit-drums, soda-water corks, 21 lbs. demy, glycerine, acid tannic, acid fluoric, Apollinaris; offers solicited for surplus stock of above. Day & Co., Herne Hill.

Overstock in exchange for clean saleable patents, or for cash.—A 20-lb. tin chemically pure glycerine (1260), also a 56-lb. ditto, at 1s. 1b.; a four-gallon tin cod liver oil, pure and fresh, 5s. gallon; a 10 lb. copper essence bergamotte, 11s. 1b.; a ditto new season's essence lemon, extra super Messina, 10s. 6d. per lb.; any of the above the quality not approved of may be returned; all packages free, carriage paid. E. R. Banner, Export Druggist, Liverpool.

#### Formulæ.

Pill-coating without machinery; elegant article; guaranteed recipe and instructions by return, on receipt of postal order 5s. W. Richardson, 1 Grove Road, St. Ann's Road, London, N.

Fragrant foaming dentifrice (like "Floriline"); marking ink, *sine* silver (aniline), writing executed defies chemicals; effervescing fruit saline (resembles Eno's); magic neuralgic drops (never-failing remedy); quinine and iron tonic (resembles Pepper's); lime-juice and glycerine (inseparable, white as milk); blue-black ink (non-corrosive, *sine* iron or galls); cherry tooth paste (never ferments, like Gosnell's); brilliantine (inseparable, like Rimmel's); pill-coating, (pearly white, no mucilage or mastic used); glycerine jelly (perfectly transparent); crimson marking ink; hair-restorer (colourless, no deposit, *sine* silver); aromatic vinegar; toilet vinegar (as Rimmel's); plate-powder (like Stevens' "Silicon"); Oleum Flavum Conc., for pomades (colour stable); soluble essence ginger (like Hay's); corn solvent, clear (not acid); liquor copaibæ comp. c. huchn et matico (mixes clear with water); gonorrhœa paste, excellent (Dr. Ricord's); taraxacum and podophyllin (resembles Pepper's); with many others; send stamp for list, stating wants. The toilet preparations are identical with those prepared by a wholesale West-end firm; others equally good; all inexpensive to make; 5s. each (five for 17.). Readers are cautioned against cheap and worthless imitations. I was first to advertise formulæ in this journal. Note change of residence, "Analyst," care of Mr. Warnes, 130 Camden Road, N.W.

The recipes for very superior perfumes, Cheddar Cliffs bouquet, Devonshire nosegay, and Glastonbury Abbey bouquet, 3s. 6d. each, or three for 10s. Chemist, 20 Dean Street, Bedminster, Bristol.

Recipe for first-class lavender-water, costs 2s. 8d. per lb.; thoroughly reliable, stood test of years, sells readily at 6d. per oz. wherever introduced, 5s. (postal order). 217/6.

Any chemist desiring a real specimen of elegant pharmacy and an efficacious remedy should obtain my formula for glycerine cough linctus, the success of the winter season 1880-81. Sent on receipt of 2s. 6d. by H. Lloyd, Totnes.

Bargain.—Thirty (original) recipes, post free 5s. in stamps, including plastic horse phisic mass, hoof-ointment, kid reviver, picture-frame cleaner, hop yeast, Seeteh morning tonic, electrified camphor for sprains, "Punch" mouth-wash, deodorant, really excellent; emollient hair-cream (inseparable) made without heat; red cough elixir, honestly worth 10s. 6d.; with full directions, doses, &c. Robson, 21 Victoria Street, Newcastle-on-Tyne.

Reliable recipes—all in actual commerce;—"Corn and Wart Eradicator" (similar to Hargreave's), never fails, painless, cleanly, may be sold with confidence, always gives satisfaction; "Hooplug-cough Syrup and Embrocation," certain cure, rapid action, no dangerous ingredients; Blood Cleanser," superior to any advertised preparation, without the danger attending many; "Physician's Prescription for Spermatorrhœa," and kindred diseases, hundreds of cases have been cured by this remedy; Mist. Bismuth. Alb., excellent for rapidly curing indigestion, vomiting, dyspepsia, &c., an elegant preparation; "Ringworm Specific," two or three applications will cure the worst case; "Tic Pills," most reliable and recommended when all else has failed; "Itch Ointment," improved form of old-fashioned popular unguent, disinfectant and deodorant; "Chlorodyne," equals Brown's in every respect, freely miscible with water, easily made; "Gingerbeer Powder," Lemonade Powder," best and cheapest in market; "Ess. Sennæ Dulc.," non-gripping aperient for children and adults, keeps well, 10d. lb.; "Peruvian Gout and Rheumatic Pills," preferred by many to Blair's, recommended with much confidence; "Quinine and Iron Tonic" (like Pepper's), bright and unchangeable, warranted excellent; "Anti-Cholera Drops," certain preventive of diarrhœa, infallible in cramp; "Podophyllin, Aloes, and Taraxacum," for all liver derangements and dispersing bile; "Essence of Deafness," simplest, safest, and most reliable remedy ever advertised; "Hair Producer," warranted to produce a healthy growth and strengthen weakly hair; "Conservative," compound powder (like Glacialine), for preserving milk, meat, fish, &c., great success; "New Toothache Remedy," never fails in giving instant ease, without destroying other teeth; "Effervescent Depurative Saline," *facsimile* of Eno's, perfectly soluble, keeps well, costs 10d. per lb., &c. Recipes 1s. 1d. each, six for 5s., post free, with full directions for making doses and all necessary information. T. Brooks, Chemist, Louth, Lincolnshire. N.B.—Recipes not approved of may be returned. Detailed lists post free on application. By kind permission foreign orders may be transmitted through the Publisher of this journal.

**WANTED**

Red round lamp. Crocker, East Dulwich.  
 A second-hand medicine-chest in good condition. Particulars to 77 West Street, Sheffield.  
 A second-hand upright case, Maw A 55, height about 23 in. 217/33.  
 A globular outside lamp; please state how glazed, and diameter, price, &c. T. Jones, York Rise, N.W.  
 A second-hand water mattress, in good condition; state size and price to Munday, Chemist, Cardiff.  
 A good second-hand Beasley's "Druggist's Receipt Book," latest edition. S. L. Cubley, Duffield, near Derby.

Dental chair, modern, in good condition. Address, Dentist, 149 Friar Street, Reading.  
 Attfield's "Chemistry," Wills' "Materia Medica." State edition, &c. Langton, Epworth, Doncaster.  
 Platform weighing-machine, to weigh not less than 5 cwt. Must be in good condition and cheap. 15/15.  
 Pill-coating machine, Maw's preferred; one or two large swan-necked carboys. Thornby, Chemist, Moss-side, Manchester.  
 Fowne's "Inorganic Chemistry," Heath's "Anatomy," Nicholson's "Manual of Zoology," Quain's "Anatomy," latest editions; state lowest price. Macfarlane, Chemist, Wishaw.

Outside globe rnbv lamp and bracket. 5/2 8.  
 Three or four 30-in. specie-jars, in good condition; two or three pear shape window carboys, all with or without stands; also, good canister-cases, from 5 ft. to 10 ft. in length, and front counter canister-cases, 10 ft. in length; also, 1-gallon black stock bottles. Send price of all or any part of above to "Chemist," 781 Fulham Road, S.W.

**ADDRESSES AND INFORMATION WANTED.**

Can any one inform W. T. Harvey, The Central Pharmacy, Margate, where he can purchase glass or other jars in form of beehive?

**Obituary.**

**ANDREWS.**—On July 29, Mr. Thomas Andrews, chemist and druggist, Shrewsbury. Aged 50 years.

**CARR.**—On August 23 Mr. William Graham Carr, chemist and druggist, Berwick-on-Tweed, in the 79th year of his age. Mr. Carr served his apprenticeship with his father, Robert Carr, his indentures bearing date 1819. When he finished his apprenticeship he commenced business in Kelso, which he carried on with success until the death of his father, when he left Kelso and returned to Berwick, where with marked skill and enterprise he conducted the business of chemist and druggist for 56 years. He retired, a few years since, in favour of his sons, on the death of his wife. Three of deceased's sons were brought up to the business; another is a Presbyterian minister at Leith. The firm of Messrs. Carr & Sons entered largely into the import of cod-liver oil, for which they became justly celebrated. Mr. Carr was highly respected by all classes, and his memory will be long cherished.

**HOLROYD.**—On July 29, Mr. Alexander Holroyd, chemist and druggist, Widnes. Aged 39 years.

**HOPPER.**—On January 28, Mr. Thomas Howie Hopper, chemist and druggist, High Street, Hawick. Aged 64 years.

**HOWDEN.**—We regret to announce the death of Mr. Robert Howden, of 78 Gracechurch Street, which event occurred on August 31, after only a few days' illness, in the 61st year of his age. Mr. Howden was one of the best known of city pharmacists. He had built up his business in Gracechurch Street since 1859, and had evidently advanced it to a highly successful position. He had a most attractive manner to all with whom he came into even momentary contact, while his many unselfish labours for the benefit of the children of the Bishopsgate Ward Schools and those of the Merchants' Seamen's Orphan Asylum made him beloved in quarters far beyond his more immediate circle. In his student days Mr. Howden took first-class certificates in chemistry and botany at the School of Pharmacy.

**JOHNSON.**—On September 9, at his residence, Belmont Road, Liverpool, Mr. Samuel Johnson, of the firm of J. H. & S. Johnson, 7 Church Street. Aged 71 years.

**LAMBERT.**—On July 21, Mr. Robert Lambert, chemist and druggist, Haworth. Aged 78 years.

**MITCHELL.**—On August 6, Mr. Richard Bird Mitchell, chemist and druggist, Chulmleigh. Aged 49 years.

**PRYER.**—On July 31, Mr. William Symes Pryer, pharmaceutical chemist, Axminster. Aged 75 years. Mr. Pryer had been a member of the Pharmaceutical Society since 1853.

**RUSTON.**—On August 11, Mr. William Ruston, chemist and druggist, Grey Street, Newcastle-on-Tyne. Aged 39 years.

**STEAD.**—On August 14, 1882, at his residence, Roundhay, Leeds, Mr. Titus Bennett Stead, chemist and druggist, 20 Upperhead Row, Leeds. At the time of his death Mr. Stead was President of the Leeds Chemists' Association, and was also a member of Executive Committee of the Chemists and Druggists' Trade Association. For many years he had occupied a seat on the Leeds Town Council, and both locally and in trade meetings was highly respected for his courtesy and sound judgment.

**WITHERINGTON.**—On July 22, Mr. Sydney Herbert Witherington, chemist and druggist, Wandsworth Road, S.W. Aged 44 years.

**Trade Notes.**

MESSRS. A. & M. ZIMMERMANN have removed from 21 to 27 Miucing Lane.

MESSRS. ALLEN & HANBURY announce that after November 1 Tonga will be reduced from 4s. 6d. to 2s. 9d.

PRICE'S PATENT CANDLE COMPANY announce a net profit of 20,165l. 3s. 10d. on the six months ending June 30, 1882.

MESSRS. THOMAS HODGKINSON, PRESTONS & KING have removed from 88 Leadenhall Street to 81 Bishopsgate Street Without.

MESSRS. THOMAS HODGKINSON, PRESTONS & KING also inform us that a gold medal was awarded to them at the Christchurch Exhibition for drugs, pharmaceutical preparations, and photographic chemicals.

MESSRS. F. DARTON & Co. have just filled a Government order for 29,400 pairs of goggles for the troops in Egypt, completing the order in less than a month.

At the Dublin National Exhibition Messrs. Bewley & Draper are showing a plant of mineral-water machinery in full operation, and much interest is taken by the public in the several processes of bottling, corking, wiring, &c.

AN order was made by Mr. Justice North on August 16 for the winding up of the Pure Beverage Company (Limited) on the petition of a creditor for 127l. No opposition was offered.

MESSRS. J. F. MACFARLAN & Co., of Edinburgh, have announced by circulars that their London office will in future be conducted by Mr. G. L. McGibbon, assisted by Mr. J. R. Young, jun., *vice* Mr. J. A. Wink.

MESSRS. ARNOLD & SONS, the eminent surgical instrument manufacturers, of West Smithfield, have been awarded a prize medal for excellence of manufacture in medical galvanic batteries, at the Electric Exhibition held at the Crystal Palace.

MESSRS. CAMERON & FERGUSON, of Salisbury Court, Fleet Street, E.C., have sent us a sample of their hygienic household paper for lavatory purposes. It is in 1s. packets, "medicated, disinfecting, perfumed, preventing piles"; for sale by chemists, stationers, perfumers, family grocers, and Italian warehousemen.

AN EXHIBITION of brewers' appliances and requisites will be held at the Agricultural Hall, London, on October 16 and following days. Among the exhibits will be those of Messrs. Bratby & Hinchliffe, Favarger & Co., Hayward Tyler & Co., Barnett & Foster, and others.



MR. THOMAS TAYLOR, of Derby, M.R.C.V.S., puts up a number of horse and cattle medicines conveniently adapted for chemists' sale. His cleansing drinks for cows are supplied either with his own name or without; in the latter case a blank is left for the insertion of the name of the vendor.

\* \*

MESSRS. MAY, ROBERTS & Co., druggists' sundries men, late of 14 and 16 Cow Cross Street, have removed to new and very convenient premises at 9 Clerkenwell Road. There are six floors, all well lighted and uniformly fitted with convenient bins. There is a lift to all floors, worked by a gas-engine (Robson's patent) by Tangye Brothers.

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MESSRS. W. J. BUSH & Co., of Artillery Lane, should have been mentioned last month among the firms who gained the chief awards at the Christchurch (N.Z.) Exhibition. They received a gold medal for essential oils, fruit essences, confectionery, colourings, &c.

We also accidentally omitted to include in our list a mention of a gold medal awarded to Messrs. Southall Brothers & Barclay, of Birmingham, for "A 1 Cod-liver Oil" and other pharmaceutical preparations.

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WE HAVE just visited the shop of Mr. Ralph Hall, Kingsland Road, London, which has been refitted throughout by Messrs. H. Poths & Co. The shop is well proportioned and light, and the general effect is good. The special novelty is in the labelling of the hottles. Messrs. H. Poths & Co.'s specialty is the hurnt-in label, black on white enamel ground. In this case a pink enamel has been substituted for the white, and the effect is decidedly pleasing. These labels are a great improvement on the gold labels, so liable to be injured by tinctures.

\* \*

MESSRS. LORIMER & Co., manufacturing chemists, of Hargrave Park Road, N., took their employes, numbering 35, one day last month to the Royal Forest Hotel, Chingford, where a liberal dinner and a pleasant picnic were provided. After dinner Mr. Lorimer, replying to the toast of "The Firm," gave an interesting account of his business experiences. He had founded one business and sold it. Then two-and-a-half years ago he had recommenced at his present establishment with three assistants, and now employed over 30. He thanked them all for their hearty co-operation.

\* \*

COMPANIES REGISTERED.—(The names of directors are marked with an asterisk.)—*Rosbach Mineral-water Company*.—Objects: To purchase certain lands, with the mineral springs, buildings, and machinery, at Nieder-Rosbach, Hesse Darmstadt, and to carry on the business of mineral-water manufacturers. Purchase consideration, 30,000*l.* Capital 60,000*l.*, in 600,000 shares of 1*s.* each, and 30,000 of 1*l.* Signatories (with one share each): \*W. Criper, Tavistock, Devon; \*W. Skewis, Tavistock; J. G. Spear, Collington, Cornwall; \*W. Pettybridge, Launceston; \*P. Selby, 149 Greenwich Road, S.E.; \*E. T. K. Fortescue, Alveston Manor, Warwick; \*G. Brown, 3 Gibson Square, W. Directing qualification, the holding of stock of the value of 50*l.* H. S. Bouquette is first managing director, at a salary of 800*l.* per annum and 5 per cent. on dividends. August 16, by Pattison, 11 Queen Victoria Street.—*Medical Constant-current Electric Company*.—Objects: To adopt an agreement made between W. R. Warren of the one part, and G. Marlowe of the other, to secure the benefit of letters patent for an improved medical battery, and to manufacture and deal in the same. Purchase consideration, 48,000*l.* Capital 100,000*l.*, in 1*l.* shares. Signatories (with one share each): \*H. Stanbrough, Gipsy Hill, Upper Norwood; \*J. W. Hulseberg, Avenue, Upper Norwood; \*W. Allison, 22 Grosvenor Mansions, Westminster; \*Major-General C. J. Richards, Southsea; \*Major-General A. Campbell-Walker, Walton-on-Thames; C. F. Tombs, 38 Lombard Street; E. E. Scott, 38 Lombard Street. Directing qualification, the holding of stock of the value of 250*l.* Remuneration: Chairman, 300*l.*; other directors, 150*l.* per annum each, and one-thirtieth of cash returns after the payment of a 10 per cent. dividend. August 17, by W. T. Manning, 2 Westminster Chambers, Victoria Street.

THE annual report of the Zoedone Company, submitted at the second ordinary general meeting on September 4, shows a balance of profit of 7,502*l.* 8*s.* 8*d.* The 15,000*l.* debentures offered for subscription among the shareholders were not all taken up. The sales have not been so large as in the previous year. The United States Government refused to grant a patent, and the directors, thinking that the shares in the American company "were not likely to become of value," sold them for 2,500*l.* The Indian company are manufacturing or preparing to manufacture zoedone in that country. The French company is not successful. The English company now pays carriage to every railway station in England, and to many in Scotland and Ireland. The licensees for splits are contesting their liability for the full royalty claimed by the company—10,000*l.*—and pending the decision of the case, or, as the report puts it, "the recovery of the sum claimed," the directors do not propose to declare a dividend. The business in German natural mineral waters is said to be progressing favourably. The meeting was very stormy. An amendment to the chairman's motion for the adoption of the report was carried by show of hands. It called on the directors to resign, on the ground of mismanagement. The directors demanded a poll, which resulted in 5,943 votes for the amendment, and 11,071 against; majority against, 5,128. For the original motion there were 11,071 votes, against 6,858; majority in favour, 4,213. The formality of the poll was contested by the shareholders, who declared that a majority of 50,001 was needed to reject the amendment. The chairman declared the business ended, and left the room with the directors and solicitor. The shareholders turned out the clerks, elected Mr. Brierley (of Manchester) to the chair, formed themselves into a special meeting, appointed a committee to draw out a requisition to compel the directors to call a special meeting for their own removal, and agreed to a *pro rata* assessment on their shares to pay expenses.

## Trade Report.

THE Board of Trade returns for the month of August show the declared value of our imported articles, also the value of the exports of British manufactures, in the first eight months to have been:—

	Imports		Exports	
	£		£	
1882 .. ..	274,360,469	.. ..	161,212,526	
1881 .. ..	263,656,018	.. ..	150,919,059	
1880 .. ..	275,632,435	.. ..	146,992,430	

The statistics concerning the exports of chemicals are as follows:—

	Aug., 1881		Aug., 1882	
	cwt.		cwt.	
Alkali.. ..	594,118	.. ..	513,037	
Ditto .. ..	value £187,103	.. ..	£159,215	
Other chemicals .. ..	£213,508	.. ..	£182,232	

THE heavy chemical market has been generally quiet, but steady. During the last week of August a large business was done in soda crystals up to 3*l.* 6*s.* 6*d.* a ton ex ship. Although the demand slackened somewhat, the market is very firm at 3*l.* 6*s.* to 3*l.* 6*s.* 6*d.* Bleaching powder has been quiet. Saltpetre has been dull, but maintains last month's prices. Nitrate of soda has lost 1*s.* 2*d.* since our last report. Citric and tartaric acids have been very quiet, the demand has been small, and little business done. The cold autumn and the small demand for cooling drinks account for this. We record a fall of ½*d.* in the price of citric. Oxalic acid is selling slowly. Sulphate of ammonia is in small supply but smaller demand; prices were 20*l.* 5*s.* to 21*l.* last month, and are now 20*l.* 15*s.* to 21*l.* 5*s.* Glycerine is cheaper.

CINCHONA.—The fortnightly sale which took place on our last day of publication was quiet, but prices were maintained. A parcel of East India *Officinalis* fetched 6*s.* 11*d.* a pound—the highest price yet given for this variety. Analysis showed that the parcel contained 5½ per cent. of quinine. Nearly 9,000 hales of South American bark were brought forward, but barely 1,000 were sold, half of this being Carthagena. Some parcels imported in 1880 came under the hammer at this sale. About 5,500 bales South American, &c. were offered at the next sales, but only 250 changed hands. 800 bales Ceylon sold well at the same



time, the demand being brisk in spite of this heavy supply. Subjoined is a statement of the landings, deliveries, and stocks of medicinal bark in London for the first seven months of the years:—

	1882	1881	1880
Landed ..	61,364	66,415	43,386
Delivered ..	49,940	56,668	49,723
Stock, July 31 ..	69,300	35,736	21,589

QUININE is firm, but quiet. English and French quinine are quoted nominally at 10s., but it is doubtful if manufacturers are prepared to supply much promptly.

OPIMUM is firm at last month's quotations. The whole crop has been harvested, but no reliable statistics as to the exact quantity have reached us. The large surplus still in hand from the last crop will prevent any serious rise in price, and we may probably expect a steady market for some months. The deficient Persian crop may affect prices in China, but these are not likely to rise high enough to withdraw any of the Turkish drug from Europe.

Mr. BARKER, of Smyrna, reports as follows:—

"As we have arrived at the end of August, and the whole of the opium crop for the year 1882 has been harvested, it will seem incredible to all those who are unacquainted with the difficulties attending the obtaining of reliable information in this country, that no accurate estimate has as yet been arrived at as to its actual extent.

"Some of our dealers appear to be firmly convinced that it will not exceed 3,500 to 4,000 baskets, whilst others again are of opinion that it will yield about 4,500, and I am inclined to look upon this latter estimate as approximately correct.

"Should the crop turn out 4,500 baskets, or cases, it may be divided as follows:—

	Baskets
Soft shipping Malatia, Tokat, Lillé, &c. ..	450
" Salonica .. ..	350
" Bogaditz 400, fine Yerli 400 .. ..	800
Karahissar denominations .. ..	1,500
Current denominations .. ..	1,000
Seconds and Talequale (probable proportion) ..	400
	4,500

"The soft shipping and Yerli qualities will, undoubtedly (owing to their scarcity) command high prices for South America throughout the season, and the current and Karahissar descriptions will barely suffice to supply North America, the Dutch East India Islands, and China, more especially as it must be taken into consideration that at least 500 baskets of this year's crop will be retained in the interior until the result of the 1883 crop is ascertained. On the other hand it must be borne in mind that there are still unsold about 1,700 baskets of last year's crop, but, new seconds being scarce this year, a large proportion of above quantity will be required for manufacturing purposes for America, England, and the continental markets, and which will probably find a ready sale at about 1s. per lb. under the cost of new opium, as the average percentage in morphia render of the old crop may be safely calculated at about 10 per cent.

"Taking all these facts into consideration, it cannot be expected that we shall see lower prices than are now ruling for many months to come, and should the crop not exceed 4,000 baskets, we must be prepared for a further rise as the season advances.

"The sales in all since my last report of the 11th inst. amount to 280 baskets, the last prices paid being as hereunder:—

	Piastres	Per lb. f.o.b.
Bogaditz, new crop .. ..	160	17 6
Fine Yerli .. ..	140	15 6
Karahissar, old crop .. ..	135	14 9
Current .. ..	133	14 6
Seconds and Talequale, old and new .. ..	127 to 130	or 13 9 to 14 3

"The arrivals in Smyrna of new opium to date amount to 1,250 baskets, against 3,500 at the corresponding period of last year, but it must be remarked that they would have been larger had it not been for the new method adopted by the Government this year in collecting the tithes, and which has hitherto prevented any arrivals coming forward from the Karahissar districts."

ALOE maintain last month's quotations, but the market is firm. A tin of Ambergris sld at 110s. at the last sales,

being 10s. dearer than last month. Balsams seem a trifle weaker, but sellers are holding. Canada has dropped 4d. or 5d. a pound. Three cases Peruvian were bought in at 11s. 6d. Boldo leaves (5 bales) brought 1s. 4d. to 1s. 6d. a pound. Long pepper: 85 bags were bought in at 152s. 6d., 13 bags damaged sold at 46s. 6d. Cubebs are still very firm, but the present extravagant prices will soon lead to increased cultivation among the natives.

At the monthly public sales of Isinglass 370 packages were offered. East Indian went off slowly. Brazilian was mostly disposed of at about 1d. a pound above previous rates. West Indian was firm.

CINNAMON.—The quarterly sales took place on August 28. About 3,900 bales were offered, and the finer qualities sold at an advance of 2d. to 4d. The Ceylon planters are anxious to replace the quarterly by monthly sales, as they believe that the large quantities now offered at each sale tend to keep down prices. Ergot seems to be cheaper. Russian cantharides are 2d. cheaper.

ESSENCE OF LEMON hardened during the month, but has receded again. Otto of roses is distinctly cheaper. English peppermint has been a small crop, and prices are higher, Mitcham (finest) is 36s., against 25s. last month.

DALMATIAN closed insect flowers are in good supply and quality. Camomiles are steady at last month's prices.

SHELLAC slightly improved in demand at the end of the month, but prices have receded. On August 31 this year the stock was 35,707 chests, against 27,410 chests at the same time last year. Cowrie is selling well at an advance of 3s. to 5s. per cwt. Olibanum is a little firmer. Arabic is steady. 14 bags of gum Accaroides were sold during the month.

JAMAICA FUSTIC AND LOGWOOD, which hardened in price last month, have receded to the July quotations. Cochineal has been selling in retail quantities at steady rates. The introduction of the aniline dyes has so reduced the demand for this dyestuff, that the Mexican and Honduras varieties have almost disappeared from the markets, and the men who made large fortunes by cultivating it in Tenerife are reduced to sore straits.

The first pocket of new season's Hops fetched the fancy price of 25l. per cwt., the highest secured for many years.

PETROLEUM has been as low as 5½d., but this price tempted speculators into the market which has hardened considerably; 5½d. is the lowest quotation at present for prompt delivery, 5½d. October and December, and 6½d. January to March.

*The following were the Stocks of certain Drugs at the Port of London on August 31, 1881 and 1882*

	1882	1881		1882	1881
Aloes .....	3,708	3,176	Gum (cont.)—		
" .....	3	1	Benjamin.. pkgs	2,198	2,582
" .....	66	211	Damar.... "	3,466	3,184
Aniseed, Star .....	413	921	Galbanum ..	19	19
Arrowroot .....	9,336	12,867	Gamboge.. "	213	234
" bxs & tins .....	6,556	7,603	Guaiacum.. "	63	47
Balsam .....	237	9	Kino .....	215	21
Bark, Medicinal .....			Kowrie .....	529	641
" .....	2,119	1,059	Mastic .....	109	126
" .....	59,214	34,051	Myrrh, E.I. ..	241	288
Borax .....	1,291	637	Olibanum.. "	8,520	6,656
Bees' Wax .....			Sandarac.. "	679	34
" .....	461	830	Senegal .....	1	8
" .....	1,039	1,721	Tragacanth pkgs	1,571	1,783
" .....	26	10	Ipeacac .....	322	180
Wax, Jap. vgtbl. pk .....	3,946	5,750	Jalap .....	237	221
Camphor .....	4,917	7,741	Nux Vomica pkgs	689	1,057
Cardamoms .....	710	592			
Coc. Ind. bgs, &c. .....	656	842	Oil—		
Colombo root pkgs .....	1,627	1,286	Castor .....	768	14
Cream Tartar .....	57	60	" .....	15,044	8,325
Cubebs .....	95	98	Palm .....	144	372
Dragonsblood .....	160	224	Cocoanut .....	10,356	11,009
Galls, China and .....			Olive .....	1,460	1,385
Japan .....	100	3,270	Aniseed .....	176	122
Trky & Prsn sks .....	9,789	3,066	Cassia .....	369	518
Gum—			Opium .....	1,715	1,157
Ammoniac pkgs .....	261	288	Rhubarb .....	765	1,187
Animi & Copal .....	8,319	4,428	Sarsaparilla .....	994	504
Arabic, Barbary .....	2,550	964	Senna .....	1,113	1,609
" .....	2,483	2,143	Shellac—		
Turkey .. ..	2,304	3,218	Orange .....	17,300	16,484
E.I. ....	249	519	Garnet .. ..	12,209	15,719
Assafetida ..			Button .. ..	6,390	6,207
			Turmeric .....	1,931	2,395
			Vermilion .....	14	51



# Monthly Price Current.

The prices quoted in the following list are those actually obtained in Mining Lane for articles sold in bulk. Our Retail Subscribers must not expect to purchase at these market prices, but they may draw from them useful conclusions respecting the prices at which articles are offered by the Wholesale Firms.

## CHEMICALS.

### ACIDS—

	Last Month	This Month
Acetic..... per lb.	0 3 $\frac{1}{2}$ to 0 0	0 3 $\frac{1}{2}$ to 0 0
pure.....	0 5 .. 0 9	0 5 .. 0 9
glacial.....	0 9 .. 0 11	0 8 $\frac{1}{2}$ .. 0 10 $\frac{1}{2}$
Benzoic Sublimate.....	3 6 .. 3 6	3 6 .. 3 6
Ex Gum..... per oz.	0 0 .. 0 0	0 0 .. 0 0
Citric.....	1 11 $\frac{1}{2}$ .. 0 0	1 11 .. 0 0
Gallic.....	4 0 .. 0 0	4 0 .. 0 0
Hydrochloric..... per cwt.	4 6 .. 7 6	4 6 .. 7 6
Nitric..... per lb.	0 3 $\frac{1}{2}$ .. 0 4	0 3 $\frac{1}{2}$ .. 0 4
Oxalic.....	0 6 $\frac{1}{2}$ .. 0 0	0 6 $\frac{1}{2}$ .. 0 0
Sulphuric.....	0 1 .. 0 0	0 1 .. 0 0
Salicylic.....	6 9 .. 7 3	6 9 .. 0 0
Tannic.....	1 6 .. 2 9	1 7 .. 2 3
Tartaric, English.....	1 7 $\frac{1}{2}$ .. 0 0	1 7 $\frac{1}{2}$ .. 0 0
foreign.....	1 7 .. 0 0	1 7 .. 0 0
ANTIMONY, crude..... per cwt.	25 9 .. 26 0	25 9 .. 26 0
star.....	54 0 .. 0 0	54 0 .. 0 0
ARSENIC, lump.....	24 6 .. 0 0	24 6 .. 0 0
powder.....	10 7 $\frac{1}{2}$ .. 10 9	10 7 $\frac{1}{2}$ .. 10 9
BRIMSTONE, rough..... per ton	127 6 .. 137 6	127 6 .. 137 6
roll..... per cwt.	8 9 .. 9 6	8 9 .. 9 6
flour.....	10 6 .. 12 0	10 6 .. 12 6

### GLYCERINE, German

refined.....	95 0 .. 108 0	85 0 .. 95 0
crude brown.....	45 0 .. 55 0	40 0 .. 45 0
IODIFORM..... per lb.	10 0 .. 0 0	10 0 .. 0 0
IODINE, dry..... per oz.	0 4 .. 0 0	0 4 .. 0 0
resublimed.....	0 6 .. 0 0	0 6 .. 0 0
MAGNESIA, calcined..... per lb.	1 0 .. 1 6	1 0 .. 1 6
Hwds.....	5 0 .. 0 0	5 0 .. 0 0
MERCURY..... per bott.	117 6 .. 0 0	117 6 .. 0 0
PRECIPITATE, red..... per lb.	2 11 .. 0 0	2 11 .. 0 0
white.....	2 10 .. 0 0	2 10 .. 0 0
PRUSSIAN BLUE.....	0 0 .. 0 0	0 0 .. 0 0
SANTONINE.....	13 6 .. 0 0	12 6 .. 0 0
SALICINE.....	12 0 .. 0 0	12 0 .. 0 0
THYMOL.....	22 0 .. 0 0	21 6 .. 0 0

### SALTS—

Alum..... per ton	122 6 .. 125 0	122 6 .. 0 0
powder.....	137 6 .. 0 0	135 0 .. 137 6
Ammonia:		
Carbonate..... per lb.	0 6 $\frac{1}{2}$ .. 0 6 $\frac{1}{2}$	0 6 $\frac{1}{2}$ .. 0 6 $\frac{1}{2}$
Hydrochlorate, crude,		
white..... per ton	600 0 .. 760 0	600 0 .. 760 0
Sulphate.....	405 0 .. 420 0	415 0 .. 425 0
Argol, Cape..... per cwt.	87 6 .. 96 0	87 6 .. 96 0
Red.....	70 0 .. 85 0	70 0 .. 85 0
Operto, red.....	35 0 .. 42 0	38 0 .. 42 0
Bleaching powder.....	5 0 .. 0 0	4 9 .. 5 0
Borax, British refined.....	69 0 .. 62 0	60 0 .. 62 0
Calomel..... per lb.	2 7 .. 0 0	2 7 .. 0 0
Chloral hydrate.....	4 5 .. 4 7	4 5 .. 4 7
Liebreich's.....	5 6 .. 6 0	5 6 .. 6 0

### Copper:

Sulphate..... per cwt.	19 9 .. 20 0	20 3 .. 20 6
Copperas, green..... per ton	42 6 .. 45 0	42 6 .. 45 0
Corrosive Sublimate..... per lb.	2 0 .. 0 0	2 0 .. 0 0
Cream Tartar, French..... per cwt.	120 0 .. 0 0	118 0 .. 120 0
brown.....	106 0 .. 0 0	106 0 .. 0 0
Epsom Salts.....	3 6 .. 4 6	3 4 $\frac{1}{2}$ .. 4 6
Glauber Salts.....	4 3 .. 5 3	4 3 .. 5 3
Magnesia: Carbonate.....	40 0 .. 0 0	40 0 .. 0 0
Fond, Hwds.....	72 0 .. 0 0	72 0 .. 0 0
Morphia Murias.....	7 3 .. 7 6	7 3 .. 7 6
Phosphorus..... per lb.	1 11 .. 2 0	1 11 .. 2 0

### Potash:

Bichromate.....	0 6 .. 0 0	0 6 .. 0 0
Carbonate:		
Potashes, Canada,		
1st sort..... per cwt.	29 0 .. 29 6	29 6 .. 0 0
Pearlashes, Canada,		
1st sort.....	46 0 .. 0 0	50 0 .. 51 0
Chlorate..... per lb.	0 5 $\frac{1}{2}$ .. 0 5 $\frac{1}{2}$	0 5 $\frac{1}{2}$ .. 0 5 $\frac{1}{2}$
Prussiate.....	0 10 .. 0 11 $\frac{1}{2}$	0 9 $\frac{1}{2}$ .. 0 11
red.....	1 11 .. 2 0	1 11 .. 2 0
Sulphate.....	9 0 .. 10 6	9 0 .. 10 6

### Potassium:

Bromide.....	1 6 .. 1 7	1 10 .. 0 0
Chloride..... per cwt.	9 0 .. 0 0	9 0 .. 0 0
Iodide..... per lb.	6 0 .. 0 0	6 0 .. 0 0

### Quinine:

Sulphate, British, in		
bottles..... per oz.	9 9 .. 10 0	10 0 .. 0 0
Sulphate, French.....	9 9 .. 10 0	10 0 .. 0 0
Sulphate, German.....	9 0 .. 0 0	9 0 .. 0 0
Sal Acetos..... per lb.	0 9 .. 0 9 $\frac{1}{2}$	0 9 .. 0 9 $\frac{1}{2}$
Sal Ammoniac, British..... per cwt.	44 0 .. 45 0	44 0 .. 45 0
Saltpetre:		
Bengal, 6 per cent.		
or under.....	21 0 .. 21 3	20 3 .. 20 6

## Saltpetre:—(cont.)

Bengal, over 6 per					
cent..... per cwt.	19 6 to 20 3	19 0 to 20 0	19 0 to 20 0	19 0 to 20 0	19 0 to 20 0
British, refined.....	25 6 .. 27 0	26 0 .. 27 0	26 0 .. 27 0	26 0 .. 27 0	26 0 .. 27 0
Soda: Bicarbonate.....	9 0 .. 0 0	9 3 .. 0 0	9 3 .. 0 0	9 3 .. 0 0	9 3 .. 0 0
Hwds.....	45 0 .. 0 0	45 0 .. 0 0	45 0 .. 0 0	45 0 .. 0 0	45 0 .. 0 0
Carbonate:					
Soda Ash..... per deg.	0 1 $\frac{1}{2}$ .. 0 1 $\frac{1}{2}$	0 1 $\frac{1}{2}$ .. 0 0	0 1 $\frac{1}{2}$ .. 0 0	0 1 $\frac{1}{2}$ .. 0 0	0 1 $\frac{1}{2}$ .. 0 0
Soda Crystals..... per ton	63 0 .. 0 0	66 3 .. 0 0	66 3 .. 0 0	66 3 .. 0 0	66 3 .. 0 0
Caustic.....	9 0 .. 9 3	9 0 .. 9 3	9 0 .. 9 3	9 0 .. 9 3	9 0 .. 9 3
Hyposulphite..... per cwt.	8 0 .. 8 6	8 0 .. 8 6	8 0 .. 8 6	8 0 .. 8 6	8 0 .. 8 6
Nitrate.....	14 6 .. 14 9	13 4 $\frac{1}{2}$ .. 0 0	13 4 $\frac{1}{2}$ .. 0 0	13 4 $\frac{1}{2}$ .. 0 0	13 4 $\frac{1}{2}$ .. 0 0
Zinc Sulphate.....	12 0 .. 14 0	12 0 .. 14 0	12 0 .. 14 0	12 0 .. 14 0	12 0 .. 14 0
SUGAR OF LEAD, White.....	36 0 .. 38 0	36 0 .. 38 0	36 0 .. 38 0	36 0 .. 38 0	36 0 .. 38 0
Brown.....	26 0 .. 0 0	26 0 .. 0 0	26 0 .. 0 0	26 0 .. 0 0	26 0 .. 0 0
VERDIGRIS..... per lb.	0 8 .. 1 0	0 8 .. 1 0	0 8 .. 1 0	0 8 .. 1 0	0 8 .. 1 0
VERMILION, English.....	2 5 .. 0 0	2 5 .. 0 0	2 5 .. 0 0	2 5 .. 0 0	2 5 .. 0 0
China.....	3 0 .. 3 1	3 0 .. 3 1	3 0 .. 3 1	3 0 .. 3 1	3 0 .. 3 1

## DRUGS.

ALOES, Hepatic.....per cwt.	70 0 .. 145 0	70 0 .. 145 0
Secotrine.....	55 0 .. 160 0	55 0 .. 160 0
Cape, good.....	55 0 .. 59 0	55 0 .. 59 0
Inferior.....	35 0 .. 54 6	35 0 .. 54 6
Barbadoes.....	60 0 .. 140 0	60 0 .. 140 0
Curaçoa.....	55 0 .. 110 0	55 0 .. 120 0
AMBERGRIS, grey..... per oz.	90 0 .. 115 0	90 0 .. 115 0
BALSAM—		
Canada..... per lb.	1 10 .. 1 11	1 6 .. 0 0
Capivi.....	2 7 .. 2 9	0 0 .. 0 0
Peru.....	15 0 .. 0 0	14 0 .. 0 0
Tolu.....	2 3 .. 0 0	2 3 .. 0 0
BARKS—		
Canella alba.....per cwt.	16 6 .. 22 0	16 6 .. 22 0
Cascarilla.....	16 6 .. 18 0	16 6 .. 18 0
CINCHONA—		
Peru, gray..... per lb.	0 8 .. 1 8	0 8 .. 1 8
Calisaya, flat.....	1 6 .. 3 0	1 6 .. 3 0
" quill.....	3 9 .. 7 9	3 9 .. 7 0
Cathsgena.....	0 7 .. 3 8	0 7 .. 3 8
Columbian.....	0 6 .. 3 6	0 6 .. 3 3
Cuprea.....	0 6 .. 2 9	0 6 .. 2 9
New Granada.....	1 0 .. 5 6	1 0 .. 5 6
Pitayo & Maracaibo.....	0 9 .. 2 3	0 4 .. 2 3
Red.....	1 9 .. 10 0	1 9 .. 10 0
East India, crown.....	0 8 .. 7 0	0 8 .. 7 0
" red.....	0 6 .. 4 3	0 5 .. 4 3
BUCHU LEAVES.....	0 5 .. 1 5	0 5 .. 1 5
CAMPHOR, China.....per cwt.	73 0 .. 0 0	73 0 .. 0 0
Japan.....	78 0 .. 80 0	75 0 .. 0 0
Refin, Eng..... per lb.	1 3½ .. 0 0	1 3½ .. 0 0
Tablets.....	1 4 .. 0 0	1 4 .. 0 0
CANTHARIDES, China.....	2 6 .. 0 0	2 6 .. 0 0
Russian.....	3 9 .. 4 0	3 6 .. 3 10
CHAMOMILE FLOWERS.....per cwt.	15 6 .. 70 0	15 6 .. 70 0
CASTOREUM..... per lb.	17 6 .. 30 0	17 6 .. 30 0
DRAGON'S BLOOD, Ip..... per cwt.	45 0 .. 235 0	45 0 .. 235 0
ERGOT OF RYE.....per lb.	0 9 .. 1 6	0 9 .. 1 6
FRUITS AND SEEDS (see also		

	Last Month		This Month			Last Month		This Month			
	s. d.	to	s. d.	to		£ s. d.	to	£ s. d.	to		
Essential Oils :											
Almond .....	30	0	to	0	0	0	to	0	0		
Anise-seed, star ..	7	9	..	0	0	7	9	..	0	0	
" German ..	10	3	..	11	3	10	3	..	11	3	
Bergamot .....	7	6	..	8	6	0	0	..	0	0	
Cajeput .....	3	0	..	2	4	3	0	..	3	4	
Caraway .....	3	0	..	5	9	0	0	..	0	0	
Cassia .....	3	10	..	4	0	3	8	..	0	0	
Cinnamon .....	1	8	..	3	10	1	8	..	3	10	
Cinnamon-leaf ....	0	2	3	0	2	0	2	3	0	3	
Citronelle .....	0	2	3	0	0	0	2	3	0	3	
Clove .....	5	9	..	6	0	5	0	..	0	0	
Juniper .....	1	5	..	6	9	1	5	..	6	9	
Lavender, Exotic .. per lb.	3	0	..	8	0	3	0	..	8	0	
" Mitcham ..	130	0	..	0	0	130	0	..	0	0	
Lemon .....	7	9	..	8	9	7	3	..	8	0	
Lemongrass .....	0	2	..	0	0	0	2	..	0	2	
Neroli .....	6	6	..	9	6	0	0	..	0	0	
Nutmeg .....	0	5	..	0	6	0	5	..	0	6	
Orange .....	9	0	..	9	6	0	0	..	0	0	
Otto of Roses .... per oz.	18	0	..	43	0	13	0	..	27	6	
Patchouli .....	1	11	..	4	0	1	4	..	2	6	
Peppermint :											
American .....	12	0	..	0	0	11	6	..	12	6	
(H. G. Hotchkiss) ..	12	6	..	13	0	12	6	..	13	0	
English .....	20	0	..	22	6	36	0	..	0	0	
German .....	13	9	..	0	0	13	9	..	0	0	
Japan .....	7	0	..	9	0	7	0	..	9	0	
Rosemary .....	1	7	..	3	0	0	0	..	0	0	
Sassafras .....	2	5	..	0	0	2	5	..	0	0	
Spearmint .....	10	0	..	11	0	10	0	..	11	0	
Thyme .....	1	9	..	4	2	0	0	..	0	0	
Mace, expressed .... per oz.	0	2	..	0	3	0	0	..	0	0	
OPIMUM, Turkey ..... per lb.	14	0	..	16	6	13	6	..	16	6	
" inferior .....	12	6	..	13	6	12	0	..	13	0	
QUASSIA (bitter wood) per ton	80	0	..	100	0	80	0	..	110	0	
RHUBARB, China, good											
and fine ..... per lb.	2	4	..	3	9	2	4	..	3	9	
Middling to fair ..	1	3	..	2	3	1	3	..	2	3	
ROOTS—Columba .... per cwt.											
China .....	16	0	..	19	0	16	0	..	19	0	
Cibretta .....	22	0	..	24	0	22	0	..	24	0	
Cus-Cus .....	0	3	4	0	3	4	0	..	3	4	
Galangal .....	10	6	..	11	0	10	0	..	11	0	
Gentian .....	20	0	..	23	0	20	0	..	24	0	
Gentian .....	19	0	..	21	0	19	0	..	21	0	
Orris .....	23	0	..	50	0	23	0	..	50	0	
Pellitory .....	42	0	..	60	0	42	0	..	60	0	
Pink .....	1	10	..	2	0	0	0	..	0	0	
Rhatany .....	0	2	..	0	4	0	2	..	0	4	
Seneca .....	2	5	..	2	8	2	5	..	2	8	
Snake .....	1	7	..	1	9	1	6	..	1	9	
SAFFRON, Valencia ....	50	0	..	52	0	49	0	..	52	0	
SARSAPILLA, Lima .. per lb.	0	1	..	1	0	0	1	..	1	0	
Guayaquil .....	1	4	..	1	7	1	4	..	1	7	
Honduras .....	1	4	..	1	8	1	4	..	1	8	
Jamaica .....	1	6	..	2	1	1	6	..	2	1	
SASSAFRAS .....	0	0	..	0	0	0	0	..	0	0	
SCAMMONY, Virgin .... per lb.	30	0	..	32	0	30	0	..	32	0	
second and ordinary ..	10	0	..	28	0	10	0	..	28	0	
SENNA, Bombay .....	0	1	..	0	3	0	0	..	0	0	
Tinnivelly .....	0	1	..	1	2	0	1	..	1	2	
Alexandria .....	0	1	..	1	0	0	1	..	1	0	
SFERMACETI, refined ..	0	10	..	1	0	0	10	..	1	0	
American .....	0	9	..	0	0	0	9	..	0	0	
SQUILLS .....	0	2	..	0	1	0	2	..	0	1	
GUMS.											
AMMONIAC, drop..... per cwt.	£	1	10	2	5	£	1	10	2	10	
ANIMI, fine washed ....	17	0	..	18	17	0	..	18	10	10	
sorts .....	11	10	..	14	10	11	10	..	14	10	
ARABIC, pale picked ..	1	13	..	1	16	1	17	..	2	5	
sorts, mid. to fine ..	1	9	..	1	12	1	9	..	1	15	
TURKEY, pick. gd. to fin.	5	10	..	8	10	5	11	..	8	10	
second & inferior ..	2	5	..	5	0	2	5	..	5	0	
sorts .....	2	0	..	2	10	2	0	..	2	10	
ASSAFETIDA, cm. to fin.	0	10	..	3	10	0	10	..	4	0	
BENJAMIN, Siam, 1st											
& 2nd .....	15	0	..	30	0	15	0	..	30	0	
Sumatra .....	5	0	..	10	10	5	0	..	10	10	
s. d. ....	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	
COPAL, Manila .....	15	0	..	70	0	15	0	..	70	0	
Angola, rd .....	145	0	..	152	6	145	0	..	152	6	
DAMMAR, pale .....	90	0	..	95	0	90	0	..	95	0	
EUPHORBUM .....	17	0	..	50	0	17	0	..	50	0	
GALBANUM .....	0	3	..	0	10	0	3	..	0	10	
GAMBOGE, picked pipe per cwt.	260	0	..	320	0	260	0	..	320	0	
GUAIACUM .....	0	9	..	2	0	0	9	..	2	0	
KINO .....	50	0	..	54	0	50	0	..	54	0	
KOWRIE, sorts .....	50	0	..	61	0	50	0	..	61	0	
selected .....	160	0	..	240	0	160	0	..	240	0	
MASTIC, picked ..... per lb.	2	6	..	3	6	2	6	..	3	6	
MIRRH, good and fine per cwt.	120	0	..	191	0	120	0	..	190	0	
ordinary to fair ..	75	0	..	117	6	75	0	..	117	6	
OLIBANUM, p. drop ....	49	0	..	64	0	44	0	..	64	0	
amber & yellow ..	44	0	..	48	0	44	0	..	48	0	
SENEGAL .....	30	0	..	40	0	0	0	..	0	0	
SANDARAC .....	1	0	..	125	0	1	0	..	125	0	
SHELLAC, Orange .....	15	6	..	127	6	115	0	..	122	6	
Liver .....	90	0	..	112	6	87	0	..	102	6	
THUS .....	15	0	..	17	0	0	0	..	0	0	
TRAGACANTH, leaf ....	260	0	..	470	0	80	0	..	400	0	
in sorts .....	40	0	..	270	0	20	0	..	270	0	
OILS.											
Shal, pale ..... per tun	£	s.	£	s.	£	s.	£	s.	£	s.	
SEAL, yellow to tinged per tun	0	0	..	0	0	0	0	..	0	0	
brown .....	0	0	..	0	0	0	0	..	0	0	
SPERM .....	75	0	..	0	0	74	0	..	0	0	
COD .....	33	0	..	0	0	32	10	..	33	0	
WHALE, South Sea, pale	81	0	..	0	0	0	0	..	0	0	
yellow .....	0	0	..	0	0	0	0	..	0	0	
brown .....	0	0	..	0	0	0	0	..	0	0	
East India, Fish ..	0	0	..	0	0	0	0	..	0	0	
OLIVE, Seville ..... per ton	38	0	..	0	0	38	0	..	0	0	
Gioja .....	38	10	..	0	0	0	0	..	0	0	
Levant .....	36	0	..	37	0	36	10	..	37	0	
Mogador .....	0	0	..	0	0	0	0	..	0	0	
Spanish .....	38	0	..	0	0	28	0	..	0	0	
Sicily .....	18	0	..	0	0	38	0	..	38	20	
COCOANUT, Cochinchina ..	35	10	..	36	0	35	0	..	36	0	
Ceylon .....	29	15	..	30	0	29	5	..	29	10	
Mauritius .....	29	10	..	30	0	30	0	..	0	0	
PALM, fine .....	35	0	..	0	0	35	10	..	36	0	
LINSEED .....	23	15	..	24	2/6	22	17/8	..	23	5	
RAPESEED, English, pale	31	0	..	0	0	32	0	..	0	0	
brown .....	29	0	..	0	0	30	0	..	0	0	
COTTONSEED .....	29	0	..	29	15	28	15	..	29	5	
LARD .....	62	0	..	66	0	51	0	..	62	0	
TALLOW .....	25	0	..	45	0	25	0	..	45	0	
s. d. ....	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	
TURPENTINE, American per cwt.	33	6	..	0	0	22	9	..	0	0	
PETROLEUM, refined .. per gall.	0	5	1/2	0	5	1/2	0	5	1/2	0	5
Spirit .....	0	6	1/2	0	7	0	6	1/2	0	7	
SEEDS.											
CANARY .....	55	0	..	65	0	55	0	..	65	0	
CARAWAY, English ..... per cwt.	0	0	..	0	0	0	0	..	0	0	
German, &c. ....	73	0	..	29	0	23	0	..	29	0	
CORIANDER .....	16	0	..	24	0	16	0	..	24	0	
HEMP .....	0	0	..	0	0	0	0	..	0	0	
LINSEED, English ..... per qr.	0	0	..	0	0	0	0	..	0	0	
Black Sea & Azof ..	44	0	..	0	0	43	0	..	0	0	
Calcutta .....	44	6	..	0	0	42	6	..	0	0	
Bombay .....	45	6	..	0	0	43	6	..	44	0	
St. Petersburg ....	0	0	..	0	0	41	0	..	0	0	
Mustard, brown ..... per bshl.	0	0	..	0	0	0	0	..	0	0	
white .....	0	0	..	0	0	0	0	..	0	0	
POPPY, East India ..... per qr.	41</										





### Pharmacy in the Province of Quebec.

To The Chemist and Druggist—

SIR,—For the information of "Sirius," I beg to say that the bye-law of the Pharmaceutical Association of the Province of Quebec is as follows:—

"No certificate of examination will be accepted from other pharmaceutical associations or colleges except such certificates shall have been granted after the holder thereof had served four years in a pharmacy and had undergone a curriculum of study equivalent to that required by the Quebec Pharmacy Act of 1875."

I believe licences have been granted to gentlemen who have passed in London for the grade of "Pharmaceutical Chemist," but they cannot claim registration as a right. The matter rests with the Board of Examiners; besides, candidates in this Province must know the French language, and very few of those coming from England, strange to say, can speak French. French is the native language of more than half the population (two-thirds would be nearer the mark, I think) of the Province of Quebec.

The Pharmaceutical Society of Great Britain, so long as it refuses to accept the diplomas issued by the Ontario College of Pharmacy or the Pharmaceutical Association of the Province of Quebec can hardly expect much in the way of reciprocity.

There is an Act in force in this Province regulating dentistry. I believe attendance on lectures at a medical college is compulsory, and the law is strictly carried out, all unlicensed practitioners being summarily dealt with. The examinations, I am told, are very strict.

I am, truly yours,

HENRY R. GRAY.

Montreal, August 11.

[This question of the reciprocity of registration of pharmaceutical certificates between the Society in Great Britain and the Societies of the Colonies excites a good deal of interest among the members of the latter bodies. There is evidence that the Canadian and Australian Societies regard with some approach to bitterness the tendency towards curtness which the Council here have manifested towards their representations on the subject, which they naturally compare with the lavish attention bestowed on any communication they may happen to get from Germany. It is to be hoped that some councillor will arise before long with some direct interest in Greater Britain, who will enforce attention to this by no means unimportant subject.—Ed. C. & D.]

### Early Mention of the Soap Test for Water.

To The Chemist and Druggist—

SIR,—In an old book on chemistry, entitled "Elemens de Chimie pratique, par M. Macquer, de l'Academie Royale des Sciences, et Docteur-Regent de la Faculté de l'Université de Paris. Printed at Paris avec approbations et Privilège du Roy, 1761," I found the following paragraph, tom. ii., p. 43, and which is probably the first mention of the soap test for water:—

"Waters are usually called hard which do not properly dissolve soap; these waters hold in solution a certain quantity of saline matters with which they are charged by infiltration through the soil. The water of the wells in Paris and its neighbourhood owes its hardness to a considerable quantity of selenite (gypsum), which it contains. These selenites are neutral salts, composed of vitriolic acid and an earthy base; if, therefore, soap is mixed with water holding a similar salt in solution, it is evident that the vitriolic acid contained in the selenite, having a greater affinity for the fixed alkali of the soap than the earthy base, will quit the latter to unite with the former. The soap consequently is decomposed instead of being dissolved, and forms a greasy pellicule on the surface of the liquid. It follows from this that soap can be used as a touchstone (*pierrre de touche*) to prove the purity of water."

F. VYNCE (Nix).

27/54. R. I. J. and H. H.—**The Veterinary Act.**—The sections of the Veterinary Act which make it illegal for unregistered persons to use the title "Veterinary Surgeon" come into operation in January, 1891. Applications for registration as existing practitioners must be made before the 27th of this month. (See also our Editorial on page 399.) The list of applicants will then be circulated among the members of the Royal College of Veterinary Surgeons for objections to be raised, and will afterwards be revised and published.

**Susquehanna Juice.**—Alluding to a query in our last "W. S. H." says: "Refer to Edwards & Sons' list, p. 82, 'Susquehanna pills'; this may lead to the discovery of 'Susquehanna juice';" on the theory that two obscurities may yield illumination, we suppose.

**Patent Medicine Licences.**—*Extra Licences are Not Required for Branch Shops.*—The following communication (13558 J) from the Board of Inland Revenue replies to a question which has been several times asked, though we suppose the fact is generally known:—

Somerset House, London, W.C.,

August 24, 1892.

SIR,—In reply to your letter dated the 12th inst., I am desired by the Commissioners of Inland Revenue to acquaint you—

1. That the patent medicine licence is general in its terms, and is available for the sale of medicines in two different places.

2. That a licence may be granted to a firm to cover business done in one or more shops of the firm.

I am to add that in the case of an individual, as in the case of a firm, the shop or shops should be specified in the licence.

I am, sir, your obedient servant,

C. W. FLOWMAN, *pro* Secretary.

The Editor of THE CHEMIST AND DRUGGIST.

### The Buott Fund.

To The Chemist and Druggist—

SIR,—

"The world is wide, these things are small,  
They may be nothing, but they are all."

Will you permit me to acknowledge the donations I have received since January last in aid of poor old Mr. Buott? It is with sincere regret that I have to state that the fund is quite exhausted. I have not, however, withheld the weekly sum which for some time I have been enabled to give Mr. Buott and his daughter, who so devotedly attends on him, for I have hoped that I might continue to receive adequate additions to the fund.

In one sense I most reluctantly repeat my appeal, yet I am persuaded there are many who knew Mr. Buott when he was not an unimportant factor in pharmaceutical politics who will not allow him to end his days in a state of unrelieved poverty. With this assurance, I again make known his wants, and plead on his behalf. He is very old and feeble, but the care and kindness we may give will help to bring rays of brightness and comfort into his sick chamber.

Yours obediently,

ROBERT HAMPSON.

205 St. John Street Road, E.C.,  
September 11.

	£	s.	d.
Alfred Bishop, London .. .. .	2	2	0
Alfred Franks, Ramsgate .. .. .	0	5	0
Thomas Randall, Wareham .. .. .	1	10	0
Professor Attfield, London .. .. .	1	1	0
G., Staffordshire .. .. .	0	5	0
Robert J. Elliott, Liverpool .. .. .	1	1	0
Kay Brothers, Stockport .. .. .	1	1	0
A Few Chemists' Assistants at 225 Oxford Street, W.	1	10	0
James Woodcock, Birkenhead .. .. .	1	1	0
Anonymous, Sheffield .. .. .	0	15	0
J. R. Wooster, Turnham Green .. .. .	2	0	0
C. B. Miller, Blackheath .. .. .	0	12	6
Thomas Pullan, Bradford .. .. .	0	10	0
J. Wellington, Fowey .. .. .	0	5	0
James R. Young, Edinburgh .. .. .	1	0	0
G. W. T., Ventnor .. .. .	1	0	0
S. T. Baxter, Florence .. .. .	0	10	0
A. C. Wootton, London .. .. .	1	1	0
Two Bolton Friends .. .. .	0	13	0
Richard Reynolds, Leeds .. .. .	0	10	0
A Few Bolton Friends .. .. .	0	10	0
William Blain, Bolton .. .. .	0	13	0
Benjamin Whiston, Tunbridge Wells .. .. .	1	0	0
Robert Hampson, London .. .. .	1	6	0

### Prescriptions for the Pharmaceutical Society of Ireland.

To The Chemist and Druggist—

SIR,—The Council of the Pharmaceutical Society of Ireland having recently passed a resolution proposed by me, authorising a collection of autograph prescriptions to be formed for the use of the Examiner in Pharmacy. I am desirous to have the collection as varied as possible, placed in books similar to those in use at the Bloomsbury Square examinations.

With this view, if any of your readers should be willing to contribute towards the above object by sending original prescriptions to the undersigned, the favour will be alike esteemed and gratefully acknowledged by

Yours,

WILLIAM N. ALLEN.

48 Henry Street, Dublin, September 8.

218/27. A. B.—Olive oil should always be kept in glass, stone, or wood, and the same rule applies to all fine vegetable oils. Petroleum, turpentine fish, and castor oils may be kept in well tinned or galvanised iron. Your other query should be inserted in the Exchange column under "Addresses Wanted."

27/62. **Silver-plating without a Battery.**—*R. W. B.* writes for a method of silver-plating candlesticks, cruet-stands, and table-cutlery which will avoid the expense of making a silver bath. He has tried formulæ which order cyanide of potassium and silver nitrate with and without cream of tartar, but the effect is not lasting.

What makes plating possible is the fact that the baser metals take the place of silver in solutions, and allow it to deposit on any suitable metallic surface. The special advantage of the galvanic process is that the silver can be driven out of its compounds by a piece of metal in one vessel and deposited on a surface in another, so that the coat of silver will go on thickening as long as any part of the first piece of metal remains.

In plating without a battery the silver is driven out of its combination by the same piece of metal on which it deposits, and the baser metal disappears in exact proportion to the quantity of silver deposited. But the deposit ceases directly the thinnest layer of silver covers the baser metal, for the latter can no longer reach the solution of silver to take its place.

Hence, for articles which have much wear a battery is indispensable, as a thick coat cannot be deposited without it. Still, good results can be obtained by simple immersion if enough care is taken to cleanse the articles beforehand, and to use pure ingredients in right proportions. Copper and its alloys, brass, German silver, and most other metals should be first dipped in a solution of caustic potash (P. B. strength), then thoroughly rinsed in fresh water, care being taken not to touch it with the hands or anything greasy. Pewter, lead, tin, and Britannia metal may be treated with the silvering solution without further preparation. Articles joined with solder containing tin must not be left long in the alkali, or the solder will dissolve and the copper blacken. Copper, brass, and German silver should next be heated and dipped in dilute sulphuric acid and water. This will not serve for soldered articles. The next dip should be very dilute nitric acid, then a mixture of

	Parts
Sulphuric acid .. .. .	4
Water .. .. .	4
Nitric acid .. .. .	2
Hydrochloric acid .. .. .	1½

In each case the volume of the bath should be 50 times that of the article to be cleansed, each dip should last but a short time, and should be followed by thorough and rapid rinsing in fresh water.

The simplest silvering solution is made by mixing into a thin paste 3 parts of soda (washing soda), 1-25 of common salt, and 1 of silver chloride, with sufficient warm water; another mixture may be made with the salt and silver chloride alone. The paste is applied with a rubber until the surface is properly coated, and should then be washed, dried, and if possible varnished with hard copal varnish. Another solution is made of

	Parts
Cream of tartar .. .. .	1
Common salt .. .. .	1
Silver chloride .. .. .	½

Dissolved in boiling water in a common kettle with the addition of a little alum. The articles are stirred up in this till properly coated, more paste being added with each batch of articles to be whitened. This bath improves by use. If it does not produce the desired result the following will be found effectual:—

Silver nitrate .. .. .	1½ oz.
Potassium cyanide .. .. .	9 oz.
Water .. .. .	1½ gallon

To be used boiling. These directions are taken from Spon's "Encyclopædia of Manufactures."

**Shop-floors.**—*Inquirer* (27/49) asks: Will any of your numerous readers state their experience as to what is the most suitable flooring for a chemist's shop in front of the counter?

**Removing Foreign Bodies from the Eye.**—*C. B. M.* call attention to the copious flow of tears produced by the fumes of menthol when it is rubbed on the face to relieve neuralgia. He suggests that this may be an automatic method of washing foreign bodies from the eye. He cannot find any suitable patient to experiment on, but has firm faith in the thorough washing the eyes receive.

27/5. **Apprentice.**—We can find no formula for Linimentum plumbi iodidi cum sapone, and suspect a mistake for potassium iodide.

29/18. **Zero.**—The formula for a good substitute for Nubian Blacking will be found on page 44 of our last volume, January, 1881.

216/22. **Gamma.**—**Battle's Vermin-killer** is supposed to consist of 1 grain or 1½ grain of strychnine in each threepenny packet, mixed with some kind of meal.

28/63. **Sulphur.**—The best firm to supply your wants are Brandan Brothers, Philpot Lane, E.C.

29/64. **Logwood and Potassium Chromate Ink.**—*W. H.* asks how to prevent this ink gelatinising. The following formulæ by Krüger are given in addition to that published in our April number. 1. Dissolve 1 lb. of extract of logwood in 15 lbs. of water, add 1 oz. of alum, and ½ oz. of yellow chromate of potassium. 2. Boil 10 lbs. of best rasped logwood with 100 lbs. of water down to 80 lbs. When cold, add 1½ oz. of yellow chromate of potassium, previously dissolved in 5 oz. of water. The object of adding the soda or alum is to prevent the gelatinisation of the ink, but they are not always effective. It will be best to use logwood chips in the place of the extract (which varies much in quality), and to make only a small quantity of the ink at a time.

29/65. **Amber Varnish.**—*G. M.*—The following is the formula for amber varnish given by Andres:—

	Parts
Amber .. .. .	30
Venetian turpentine .. .. .	5
Oil of turpentine .. .. .	100

M. S. A.

We do not know if this was used by the Cremona makers, but we should advise you to consult some standard work on the history of the violin on the whole of the interesting question of the varnish for violins.

### The Right to use the word "Pharmacy."

29/45. *Inquirer* is informed that the Minor qualification does not entitle a man to call himself a pharmacist, but the question whether he may call his shop a pharmacy has not been decided. We believe, however, that some years ago the Pharmaceutical Council threatened an action against some one, not a pharmaceutical chemist, for calling his shop a "pharmacy," but that, being resisted, they made no attempt to enforce the claim they had set up; this proves nothing, but we hardly think they would have succeeded if they had gone to court.

29/34. *Subscriber* will be glad to hear of the best way to freshen **Fly-papers** that have lost their virtue by damp, age, or some other cause.

### Clippings and Pickings.

**VALUE OF EXPERIENCE.**—A Celtic friend was recently badly cut about the head in an accident and bleeding freely; but he remonstrated against having his wounds dressed, when the surgeon told him he would bleed to death if they were not attended to. His reply was characteristic: "Docthur," said he, "I never bled to death in all me life."

"I WOULDN'T be in Egypt," said Mrs. McGill last week, "for all the wealth of Creasote." Seeing a look of astonishment in the faces of her auditors, she added: "Creasote, you know, was an old Roman god, and everything he touched turned into gold."

**MR. ERNEST HART**, editor of the *British Medical Journal*, when his health was drunk at the Association dinner at Worcester last month, said, in reply, that, instead of making a speech, he would read some lines which had been sent him by an anonymous friend. They were as follows:—

Can he leave all his wrongs to the future, and carry his heart in his cheek?

Can he do an hour's work in a minute, and live on a sixpence a week?

Can he courteously talk to an equal, and hroweat an impudent dunce?

Can he keep things in apple-pie order, and do half-a-dozen at once?

Can he press all the springs of knowledge with quick and reliable touch,

And be sure that he knows how much to know, and knows how to not know too much?

Does he know how to spur up his virtue, and put a check-rein on his pride?

Can he carry a gentleman's manners within a rhinoceros' hide?

Can he know all, and do all, and be all, with cheerfulness, courage, and vim?

If so, we perhaps can be makin' an editor "outer of him"!

And 'tis thus with our noble profession, and thus it will ever be; still

There are some who appreciate its labours, and some who perhaps never will.

### HAY'S SOLUBLE ESSENCE OF LEMON.

WE have received from Mr. W. Hay, of Hull, samples of a soluble essence of lemon, and of lemonade made therewith. The essence mixes well with water, and has a delicate flavour, but it is rather liable to oxidation if kept in bottles not quite full. The lemonade has a far more delicate flavour than that generally met with.



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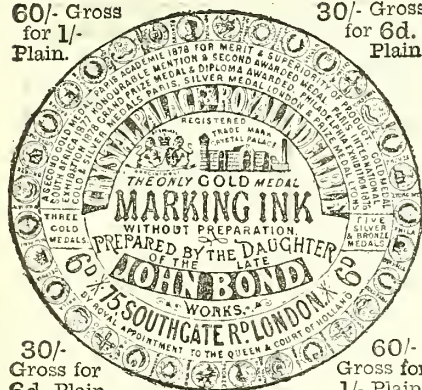
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DIRECT FROM THE CELEBRATED SPRING IN HUNGARY.

*Comparative Analyses of Aperient Mineral Waters by Professor TICHBORNE, F.C.S., LL.D., President of the Pharmaceutical Society of Ireland, &c.*

	Æsculap.	Friedrichshall.	Hunyadi Janos.
Sulphate Magnesium .....	1750·3	641·38	1563·50
„ Sodium .....	1340·7	715·35	1579·57
Ammonia (free) .....	0·3	.....	trace
Sulphate Potassium .....	3·5	25·18	7·16
„ Calcium .....	185·6	171·30	.....
Chloride of Sodium .....	301·3	997·22	105·31
Bicarbonate „ .....	140·3	.....	51·52
Carbonate Calcium .....	1·9	} 21·02	60·51
„ Magnesium .....	12·0		
„ Iron .....	3·5		
Alumina .....	5·6	} .....	0·29
Nitrates (minute trace) .....	.....		
Silica .....	1·6		
Bromide Magnesium .....	.....	2·75	.....
Chloride „ .....	.....	501·14	.....
Carbonate Strontium .....	.....	.....	2·0
Total .....	3746·6	3079·74	3370·66

While "Æsculap" is as rich in Salts of Sodium and Magnesium as any known Mineral Water, it contains more Antacids and less Potassium Salts. It therefore combines all the purgative properties with greater alkalinity and less of the debilitating action of other aperients. Moreover, it is the most palatable of any of its class.

Herr JOHANN MOLNAR, Government Analyst of the Hungarian Kingdom, in a Report to the Academy of Science, states that :—"ÆSCULAP is among the strongest of the Aperient Waters of Buda, and in consequence of its purity and cleanness will be employed for medicinal purposes with satisfaction."

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Dr. PROSSER JAMES, Lecturer on Materia Medica and Therapeutics at the London Hospital, and Physician to the Hospital for Diseases of the Throat and Chest, says, in his report on the Therapeutics of Mineral Waters :—"The Æsculap spring may claim to be the chief of the Ofen group, for, with only five grains less of purgatives than the highest, it is three times as rich in antacids. It contains three times as much chloride of sodium as the other Hungarian waters named."

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 PRICE LIST ON APPLICATION.

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Nos.	0	1	2	3
Size	8½ × 7¼	9½ × 8¼	10¾ × 9¼	11¾ × 10¾
Per doz.	5/3	6/9	8/6	10/3
280... <i>Flannel</i> , lined with Chamois leather—				
Nos.	0	1	2	3
Size	8½ × 7¼	9½ × 8¼	10¾ × 9¼	11¾ × 10¾
Per doz.	6/9	9/	12/	15/4
281... <i>Felt, Double</i> , for the chest and back, assorted scarlet and white—				
Nos.	1	2	3	4
Size	11 × 8	12 × 9½	13½ × 10½	15 × 11½
Per doz.	16/3	21/3	27/3	32/3
282 ... " <i>Sandringham</i> ," <i>Felt</i> , for chest and back, assorted, scarlet and white—				
Nos.	1	2	3	4
Size	12 × 8½	13½ × 9¼	15 × 11	17 × 12¾
Per doz.	23/	28/3	34/	41/
<i>Skin, assorted sizes—</i>				
283... <i>English Hare</i> . . . . .	per doz	16/		
284... " <i>Rabbit</i> . . . . .	"	12/		
285... <i>Labrador, Grey</i> . . . . .	"	14/		

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883... <i>Cork</i> . . . . .	per d. z.	4/
884... <i>Incorrodible Metal</i> . . . . .	"	7/
885... <i>Silver electro plat d</i> . . . . .	Nos. 1 2 3	
	per d. z.	11/6 17/3 18/6
886... <i>Silver Gilt</i> . . . . .	24/4 26/	29/
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889... <i>Shetland Wool Respirators</i> . . . . .	per doz.	9/

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Retail	Per doz.	Retail	Per doz.	Retail	Per doz.	Retail	Per doz.
6/0..Alcool de Menthe Ricles	..42/	4/6..Capsules Raquin	..30/	2/9..Grimault's Syrups	..22/	6/0..Rabuteau's Elixir Ferrug.	..48/
2/9.. Ditto ditto	..21/	4/6.. " Mathey Caylus	..22/	2/3..Guyot's Gondron	..17/	3/6.. " Sirop	..27/
3/6..Aubergier's Syrup	..27/	4/6..Chassaing's Wine	..36/	11/..Laville's Gout Tincture	..84/	4/0..Racahout	..33/
1/9.. " Pâte	..13/	2/9.. " Pills	..25/	11/.. " Pills	..84/	5/0..Reynal's Bougies	..42/
6/6..Bay Rum	..54/	4/6..Clin's Bromide Camph. Caps	45/	2/3..Papier Fayard	..13/	3/6..Ricord's Injection	..24/
3/6.. Ditto	..27/	4/6.. " Dragées	45/	1/1 1/2 Ditto	..6/6	4/6.. " Capsules	..34/
2/0..Belloc's Charcoal	..16/	2/9..Dusart's Syrups	..27/	4/6..Papier Frunceau	..27/	8/0.. " Syrup	..72/; 42/; 26/
1/9.. " Lozenges	13/	4/6.. " Wines	..36/	2/3.. Ditto	..15/	2/0..Star Paper	..15/
4/6..Blancard's Pills	..30/	5/0..Eau Botot	..42/	1/9..Pâté Aubergier	..13/	2/9..Tamar Indien	..21/
2/9.. Ditto	..18/	3/0.. " Ditto	..26/	1/9.. " de Georgé	..13/	2/9..Vallet's Pills	..24/
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4/6..Bugeaud's Wine	..36/	2/9..Flon's Syrup	..23/	1/9.. " de Berthé	..15/	4/6..Veloutine (White and Rose)	39/
4/6..Bully's Vinegar	..33/	2/6..Gayetty's Paper	..18/	1/9.. " de Nafé	..13/	3/6.. Ditto ditto	36/
2/6.. " Ditto	..17/	2/8..Granules Arsen. Acid	..15/	7/0.. " Regnaud	..13/	3/0..Vichot's Trochisques	..27/
4/6..Candé's (Lait Antéphilique)	40/	2/3.. " Iron	..15/	1/9..Pierlot's Valerian	..54/	4/6..Valentine's Meat Juice	..40/
4/0..Capsules Bromide of Camph.	45/	2/3.. " Soda	..15/	2/9..Rabuteau's Dragées Ferrug.	27/	4/6..Vin Mariani	..42/
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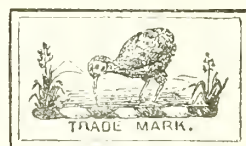


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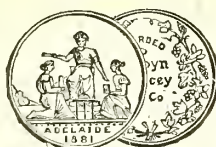


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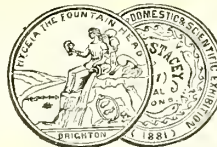
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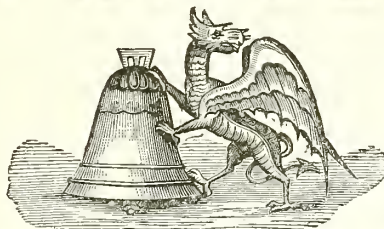
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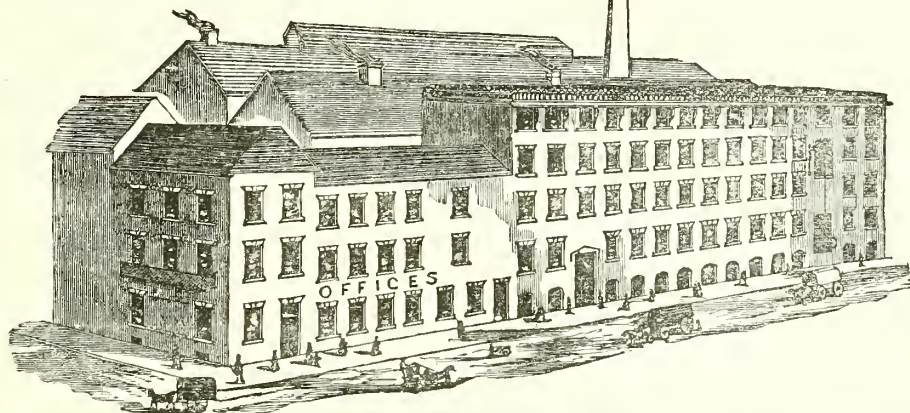


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**SCHERINGS' PURE CHEMICALS**

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<b>ACID, CARBOLIC</b> or Phenol Absolut. ... ..	Fine white hard crystals ... ..	Free from Cresylic Acid. Watery solution will not show greasy spots floating on top.
<b>ACID, GALLIC</b> ... ..	Almost white needles ... ..	Freely and entirely soluble in alcohol or water.
„ <b>PYROGALLIC</b> ... ..	Bi-sublimed, white, bulky ... ..	Ditto ditto ditto.
„ <b>SALICYLIC</b> (Kolbe's) ... ..	White, powder, crystallised, and dialysed	Dissolves colourless in water or alcohol; purest for medicine.
„ <b>TANNIC</b> ... ..	Lightest crystals ... ..	Dissolves almost colourless in water, alcohol, and ether.
„ „ ... ..	Powder and granulated ... ..	Dissolves freely in water, alcohol, and ether.
<b>CELLOIDINE</b> (Patent) ... ..	Gelatine plates ... ..	Purest Pyroxylin; inexplusive.
<b>CHLORAL HYDRATE</b> ... ..	White cake and crystal ... ..	See Liebreich's, below.
<b>CHLORAL HYDRATE</b> (Liebreich's)	Transparent rhomboidals (facsimile of Dr. Liebreich's)	Will not decompose by age.
<b>CHLOROFORM</b> (ex Liebreich's Chloral)	Schering's original label ... ..	Free from foreign chlorides. Will leave no odour on evaporation.
<b>CROTON CHLORAL</b> ... ..	Shiny crystalline scales. (Powder form most objectionable)	Free from foreign chlorides.
<b>GLYCERINE</b> ... ..	S.G. 1260, double distilled, brilliantly white, odourless; also lower S.G. and qualities	Free from lime, chlorides, metals; will stand severest chemical tests.
<b>IODINE</b> ... ..	Resublimed, fine scales ... ..	Purest.
<b>IODOFORM</b> ... ..	Dry yellow scales ... ..	Purest, by medical reports.
<b>POTASS BROMIDE</b> ... ..	Fine white dry regular crystals ... ..	Perfectly free from iodide, and the most free from chloride.
„ <b>CAUSTIC</b> ... ..	Lump and stick, white ... ..	Commercially pure, and pure by alcohol.
„ <b>CYANIDE</b> ... ..	Ditto ditto ... ..	30%, 45%, 60%, and 95%.
„ <b>PERMANGANATE</b> ... ..	Large and small crystals ... ..	Chemically pure.
„ <b>IODIDE</b> ... ..	Fine white dry regular crystals ... ..	Apply Barytic and other tests. This will never change colour.
<b>SILVER, NITRATE</b> ... ..	Fine large crystals ... ..	63 to 63½% pure silver.
<b>SODA, CAUSTIC</b> ... ..	Lump and stick, white ... ..	Chemically pure, and pure by alcohol.
<b>SODA SALICYLATE, and other Salicylates</b>	White powder and crystals ... ..	Freely soluble in water and alcohol.

**H. FINZELBERG, of Andernach-on-Rhine,**

## MANUFACTURER OF

<b>ERGOTINE</b> , pure Dialysed ...	Brown colloid, purified by Dialysis	Free from all saline matter present in the ordinary Ergotine and extracts.
<b>FERRUM OXYD.</b> (5% Dialysed)	Transparent brown liquid, purified by Dialysis	Free from all saline matter. Diluted by ten times its weight of water, will stand the test of Nitrate of Silver.
<b>PEPSIN PORCI</b> (100%) ... ..	White, sweet, odourless powder ...	Freely soluble in water, not hygroscopic, and will not deteriorate; will dissolve (by Wittstein's test) 100 parts of white of egg and 250 parts of fibrine.

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**PURE CHINOLINE AND ITS SALTS,**  
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TWENTY YEARS' PUBLIC TEST, and THOUSANDS OF TESTIMONIALS from all parts of the World establish

**PHOSPHODYNE** the only Safe, Reliable, and Never-failing Phosphoric Remedy for Over-worked Brain, Sleeplessness, Harassing Dreams, Worry, Anxiety, Excitement, Business Pressure, Wasting Diseases, Nervous Prostration, Stomach and Liver Complaints, Impoverished Blood, Premature Decay, and all morbid conditions of the system dependent upon the deficiency of the Vital Forces.

**DR. LALOR'S PHOSPHODYNE** Purifies and Enriches the Blood, Clears the Skin, thoroughly invigorates the Brain, Nerves, and Muscles, Re-energises the Failing Functions of Life by supplying the PHOSPHORIC element which has been wasted, and thus imparts Energy and Fresh Vitality to the Exhausted Nervo-Electric Force, and rapidly Cures every form of Nervous Debility, Paralysis, Kidney, Nervous Mind, and Heart Diseases, from whatever cause.

Sold in Bottles, at 4s. 6d. and 11s., by all Export, Wholesale, and Retail Medicine Vendors throughout the World. Manufactured only at the

**PHOSPHODYNE LABORATORY** by Dr. R. D. LALOR, Bay House, 32 Gaisford Street, London, N.W. (The sole Proprietor and Originator of Phosphodyne).

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PERFECT IN PURITY AND UNIFORM IN STRENGTH.

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ARE THE BEST AND CHEAPEST.

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Copaiba Capsules, No. 0 .....	7/	1/6
" " No. 1 .....	6/6	1/3
" " No. 2 .....	6/	1/
Copaiba, Alum and Cubeb .....	7/	2/
Compound Ferruginous .....	7/	2/
Cubeb Oil .....	11/	2/6
Male Fern Oil .....	12/	3/
Cod Liver Oil .....	6/	1/6
Castor Oil .....	5/6	1/3
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As originally introduced by A. P. Towle, and free from stamp duty for dispensing.

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In 1, 2, and 4 lb. Bottles, at 3s. per lb., and 6d. and 1s. Boxes. Filled, Lined and neatly got up for the counter, 4s. 6d. and 9s. per doz.

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Bills with name on application with instructions for forwarding.

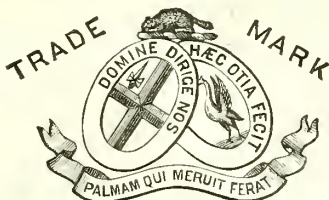


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## SMITH'S TASTELESS DANDELION ANTIBILIOUS PILLS,

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A NON-MERCURIAL LIVER MEDICINE, specially useful to the habitually constipated, and safe for all ages.

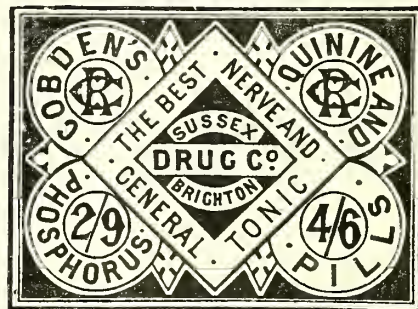
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## VALUABLE & EXCELLENT FAMILY MEDICINE.



Are one of those rare Medicines, which, for their extraordinary properties, have gained an almost

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During a period of nearly Fifty Years they have been used most extensively as a **Family Medicine**, thousands having found them a simple and safe remedy, and one needful to be kept always at hand.

These Pills are purely Vegetable, being entirely free from Mercury or any other Mineral, and those who may not hitherto have proved their efficacy will do well to give them a trial.

Recommended for disorders of the HEAD, CHEST, BOWELS, LIVER, and KIDNEYS; also in RHEUMATISM, ULCERS, SORES, and all SKIN DISEASES—these PILLS being A DIRECT PURIFIER OF THE BLOOD.

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Strongly Recommended in Asthma, Bronchitis, Consumption, Atrophy, Indigestion, and in Stomach Coughs.

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The introduction of this Preparation to the notice of the Profession for every variety of bleeding arose from the desire expressed by several eminent Physicians and many patients to obtain an efficient Styptic at a moderate price—Ruspini's celebrated Styptic being so costly.

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Numbers are constantly bearing testimony to their great value, as may be seen from the Testimonials published from time to time. By the timely use of such a remedy, many of the seriously afflicting disorders which result from the proper means being neglected might be avoided, and much suffering saved, for

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For Wholesale Terms see List of "Proprietary Articles" in most Price Currents.

## INDEX TO ADVERTISEMENTS,

See Pages 21 and 22.



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The Proprietor knew from experience that success was certain, but the human breast is so imbued with prejudice, that it forms one of the strongest barriers to break down and the greatest enemy to overcome before any headway can be made towards the mansion of success. Truth has often proved itself to be "stranger than fiction," and it is a fact as solid as truth that

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have now become one of the leading Patent Medicines of the present day. From north to south, and from east to west, they are to be found in the homes of the rich and the poor. All classes of society use them, and they are by thousands declared to be

### WORTH A GUINEA A BOX.



TRADE MARK.  
No. 1416.

For a Weak Stomach, Impaired Digestion, and all Disorders of the Liver, they act like "MAGIC," and a few doses will be found to work wonders on the most important organs in the human machine. They strengthen the whole muscular system, restore the long-lost complexion, bring back the keen edge of appetite, and arouse into action, with the ROSE-BUD of health, the whole physical energy of the human frame. These are "FACTS" admitted by thousands, embracing all classes of Society, and one of the best guarantees to the Nervous and Debilitated is, BEECHAM'S PILLS have the LARGEST SALE of any Patent Medicine in England.

*In South Africa BEECHAM'S PILLS have the largest sale of any Patent Medicine ever introduced into that part of the World.*

All Patent Medicine Dealers abroad will find BEECHAM'S PILLS one of the most profitable and one of the best selling articles in the Market. The demand for them is regular, and all Foreign Houses who are desirous of getting a First-class Patent Medicine are respectfully requested to get BEECHAM'S PILLS from the leading Wholesale Houses in England (as no business will be done with any Foreign House by the Proprietor direct).

**CAUTION.**—The Public are requested to notice that the words "BEECHAM'S PILLS, ST. HELENS," are on the Government Stamp affixed to each Box of the Pills; if not on, they are a Forgery.

Prepared only, and Sold Wholesale and Retail, by the Proprietor,

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## ST. HELENS, LANCASHIRE, ENGLAND.

In Boxes, 1s. 1½d. and 2s. 9d. each.

**N.B.—FULL DIRECTIONS ARE GIVEN WITH EACH BOX**

HOW TO SING AND SPEAK WITH PERFECT EASE.

## VOCALINE.

TRADE  
REGISTERED.



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REGISTERED.

For Hoarseness, Voice, Throat, and Chest Affections, Coughs, Colds, Asthma, &c. In Bottles at 1s. 1½d. and 2s. 9d.

## TONIC DROPS,

For Indigestion, Headache, Heartburn, Sickness, and all Diseases arising from the Stomach and Liver.

In Bottles at 1s. 1½d. and 2s. 9d.

Manufactured only by R. BUXTON, Consulting Chemist, Cavendish St., BARROW-IN-FURNESS.

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MANUFACTURERS OF

**MEDICINAL CARBOLIC ACID CRYSTALS**, for Internal & External application, and for commercial uses.  
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Ditto, white, in 16 oz. and 8 oz. bottles.

**CARBOLIC ACID POWDER**, in casks, bags of 112 and 56 lbs., decorated tins and paper bags.

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**PERFUMED SOLUTION OF CARBOLIC. AURINE. PICRIC CRYSTALS.**

**BISMARCK BROWN. MAGENTA.**

**NITRATE OF LEAD. PURE AMMONIA.**

**PURE NITRIC and HYDROCHLORIC ACIDS.**

## HENRY'S CALCINED MAGNESIA

Continues to be prepared with scrupulous care in the greatest chemical purity, by

**Messrs. THOMAS & WILLIAM HENRY, 11 East Street, St. Peter's, Manchester,**

And is sold in bottles, authenticated by a Government Stamp bearing their Names and Trade Mark, "Henry's Calcined Magnesia."

Price 4s. 6d., or 2s. 9d.

**NEW YORK**—MESSRS. J. & S. FERGUSON, Pine Street. **PARIS**—MESSRS. ROBERTS & CO., 23 Place Vendôme.

ESTABLISHED 1873.

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(Successor to the Tyne Vale Chemical Company),

**TYNE VALE CHEMICAL WORKS, FORTH BANKS, AND SKINNER BURN ROAD, NEWCASTLE-UPON-TYNE,**

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**METH.**, for Ice Making, &c., &c.  
**METH.**, Treble Refined, for Photographic Collodion, &c.  
Quotations on application.

## SUGAR COATED PILLS

**R. HAMPSON** prepares the Pills of the Pharmacopœia, and a great variety of Pills from convenient formulæ; also Pills from private formulæ. The Pills are made of the best ingredients, and being QUICKLY and perfectly diffusible, invariably give satisfaction. A Price Current, with formulæ and sample, post free. Supplied direct or through the Wholesale Houses. Special quotations for large quantities.

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THE GREATEST CARE AND JUDGMENT USED IN THE SELECTION AND PACKING OF INDENTS.

**SPECIALITIES.**—Herbs (Culinary and Medicinal) in Packets.

PRICE LISTS ON APPLICATION.

## INDEX TO ADVERTISEMENTS,

See pages 21, 22.



# Dr. J. COLLIS BROWNE'S CHLORODYNE.

THE ORIGINAL AND ONLY GENUINE.

## IMPORTANT CAUTIONS

From Lord Chancellor SELBORNE, Vice-Chancellor Sir W. PAGE WOOD,  
and the LORDS JUSTICES OF APPEAL.

VICE-CHANCELLOR SIR W. PAGE WOOD, by whom the suit in Chancery was first heard, stated in his judgment that 'Dr. J. Collis Browne was undoubtedly the Inventor of Chlorodyne, that the whole story of the Defendant Freeman was as deliberately untrue as the falsehood he had deposed to with reference to the use of his Chlorodyne in the Hospital.'

The VICE-CHANCELLOR also stated, 'that Chlorodyne was a fanciful name, and had application been made sooner, the Court would have given Dr. Browne protection.'

LORD CHANCELLOR SELBORNE coincided with the judgment of the Vice-Chancellor upon this point, and stated 'that had application been made at a proper time and place, the Court would have found means to restrain the Defendant from misrepresenting the decision of the Vice-Chancellor.'

LORD JUSTICE JAMES, on appeal, stated in his judgment, 'that the Defendant Freeman had made a deliberate misrepresentation of the decision of Vice-Chancellor Wood.'

It was proved in Court, on affidavit by Mrs. Forbes, of Paris, that the testimonial published in the *Times*, November 14th 1865, speaking of the great efficacy of Chlorodyne in Cholera, referred to Dr. J. Collis Browne's Chlorodyne, and that she never used any other, that she had written to the Defendant Freeman to that effect; notwithstanding which notice the Defendant publishes the said testimonial as referring to his medicine.

The Editor of the *Medical Times*, in his report on Chlorodyne, January 13th, 1866, gives information that the Chlorodyne referred to was the medicine introduced by a retired Army Medical Officer, which was Dr. J. Collis Browne; still this is published by the Defendant as testimony to his medicine.

Numerous affidavits from eminent Physicians and others were produced in Court, stating that Dr. J. Collis Browne was the inventor of Chlorodyne, and that when prescribing they mean no other.

The Defendant himself publishes that his compound is in effect and composition quite different to any other preparation nevertheless he assumes the name, testimonials, &c., of Chlorodyne.

Technicalities in law prevent that protection which the public should justly have against such a course of conduct. It is now incumbent on all who purchase Chlorodyne to see that the name, 'Dr. J. Collis Browne's Chlorodyne,' is engraved on the Government Stamp, as it is not sold otherwise. All other compounds under the name of Chlorodyne are spurious. All attempts at analysis have failed; hence the statement that the constituents of Chlorodyne are known is a misrepresentation.

From SYMES & Co., Pharmaceutical Chemists, Medical Hall, Simla,  
January 5, 1880.

To J. T. DAVENPORT, Esq., 33 Great Russell Street, Bloomsbury, London.

DEAR SIR,—Have the goodness to furnish us with your best quotations for Dr. J. Collis Browne's Chlorodyne, as, being large buyers, we would much prefer doing business with you direct than through the wholesale houses. We embrace this opportunity of congratulating you upon the wide-spread reputation this justly-esteemed medicine has earned for itself, not only in Hindostan, but all over the East. As a remedy of general utility, we much question whether a better is imported into the country, and we shall be glad to hear of its finding a place in every Anglo-Indian home. The other brands, we are happy to say, are now relegated to the native bazaars, and, judging from their sale, we fancy their sojourn there will be but evanescent. We could multiply instances *ad infinitum* of the extraordinary efficacy of Dr. Collis Browne's Chlorodyne in Diarrhoea and Dysentery, Spasms, Cramps, Neuralgia, the Vomiting of Pregnancy, and as a general sedative, that have occurred under our personal observation during many years. In Choleraic Diarrhoea, and even in the more terrible forms of Cholera itself, we have witnessed its surprisingly controlling power. We have never used any other form of this medicine than Collis Browne's, from a firm conviction that it is decidedly the best, and also from a sense of duty we owe to the profession and the public, as we are of opinion that the substitution of any other than Collis Browne's is a deliberate breach of faith on the part of the chemist to prescriber and patient alike.

We are, Sir, faithfully yours,

SYMES & Co.,  
Members of the Pharm. Society of Great Britain,  
His Excellency the Viceroy's Chemists.

Sold in Bottles—1s. 1½d., 2s. 9d., 4s. 6d., and 11s. Usual Discount to the Profession.

SOLE MANUFACTURER,

**J. T. DAVENPORT, Pharmacist,**  
83 GREAT RUSSELL STREET, BLOOMSBURY SQUARE, LONDON.

# TWEMLOW'S CHLORODYNE

## NOTE!

Proportions of active ingredients—  
Morphine Mur. gr. iv. per f. oz., Acid.  
Chloroform Pur. m. viij. per f. oz.,  
viz. :—Its non-separating qualities as follows,  
Mithum; its containing none but "Oil Meath. Pip. Ang."  
and strength; guaranteed to contain ingredients quite  
equal, if not superior, to any other make of Chlorodyne  
extant, as attested by Surgeons and Chemists quite  
whole of Great Britain: its superiority over the  
Chlorodynes is alone the cause of its being in such  
My price is 7/ lb. net, in 1-lb. Bottles,  
bottles free. 6/9 lb. net, in 5 or 6 lb.  
Winchester, bottles free. 6/6 lb. net, in  
Wholesale Manufacture of Chlorodyne for Wholesale  
and Retail Houses, in large or small quantities, to their  
own recipes, guaranteed to be faithfully prepared, at  
SPECIAL QUOTATIONS FOR LARGE QUANTITIES.  
Carriage paid to any Wholesale House in London or  
Liverpool upon any quantity of £1 worth sent direct  
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Send for Samples. Prepared only by

**RICHARD TWEMLOW,**  
CHEMIST,  
and Chlorodyne Medicated Lozenge,  
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MANCHESTER.

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[Trade Notice.

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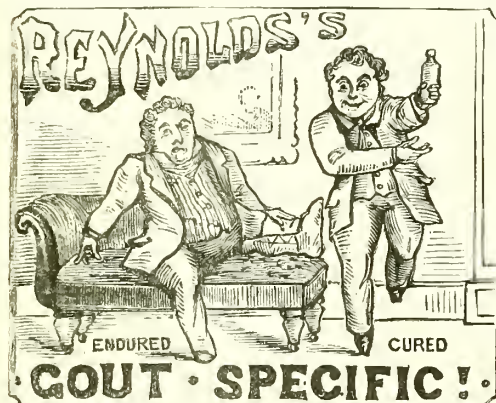
Established by 90 years' experience as a safe and effective Medicine.

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SHOW CARDS AND BILLS ON APPLICATION.



## REYNOLDS'S GOUT SPECIFIC.

NO MORE GOUT!  
NO MORE RHEUMATISM!!

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CHARLES W. OWEN, L.R.C.P., Lon., M.R.C.S., Eng.

The Divisional Head Quarter Staff and Civil Surgeon, Cabul.

THE "TIMES," AUGUST 13th, 1877.

From our own Correspondent with the Russian Army.

OKOUN, July 25th, 1877.

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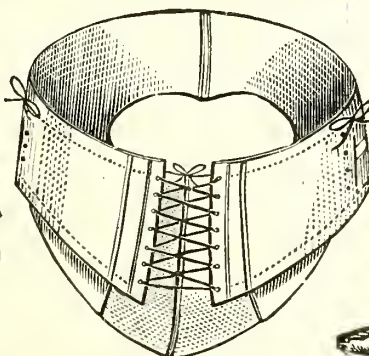
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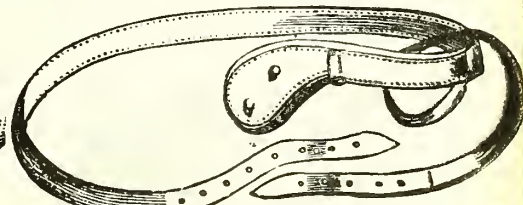
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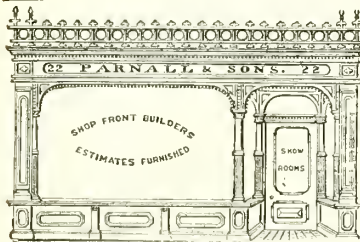
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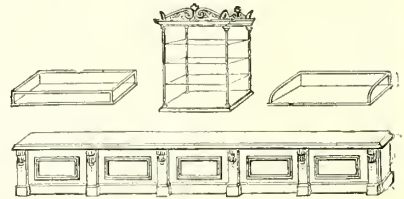
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Loose, at 7s. per gross, and in boxes at 8s., 9s., and 10s. per doz.; Extra-scented Violet Powder, prepared with wheaten starch, in 1d. boxes, 7s. per gross, 2d. boxes, 14s. per gross, 1-lb. packets, 2s. 6d. per doz.; Prepared Fuller's Earth, in 1d. boxes, 7s. per gross, 2d. boxes, 14s. per gross, and 1-lb. boxes, 2s. per doz., through the Wholesale Houses, or from 9 OLD STREET, LONDON, E.C.; and will forward list of articles packed by him on application.

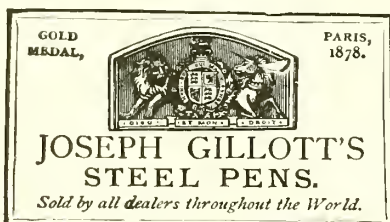
### CHEAP STYLOGRAPHIC PENS.

SUPERSEDE IN ONE INSTRUMENT  
PENCIL, PEN, AND INK.

PRICES 1s. to 7s. 6d.

Send for List and Particulars to

LETTS, SON & CO., LIMITED,  
LONDON BRIDGE, E.C.



### GEORGE TITTENSOR,

MEDICAL LABELLER & GLASS WRITER,

10 FISHERGATE, YORK, having worked for the last 10 years at the York Glass Works, begs to state that he can supply Show Tablets and Glass Drawer Labels of the latest patterns; also Paper Labels, &c. Shops and Show Jars re-labelled in any part of the country. TERMS ON APPLICATION.

### SPONGE BAGS,

WATERPROOF CHECK, SUPERIOR QUALITY.

No. 1	2	3	4	5	6
7x6	8x7	9x8	10x9	11x10	12x11 inches
5/-	6/-	7/-	8/-	10/-	12/- per doz.

Sample orders to any City House for enclosure on receipt of value.

### JOHN CENTRETON,

24 NILE ST., CITY ROAD, LONDON, N.

## LLOYD RAYNER'S

## £75 CHEMIST'S SHOP

FITTED COMPLETE WITH ALL NEW GOODS,

INCLUDING

GLASS SHOW CASES, SHOP BOTTLES, JARS, &c.

If for Export, suitable for any climate, including  
Packing Cases, and delivered to any of the  
London Docks, free, £85.

The above Fittings are suitable for a Shop  
14 feet long by 12 feet wide.

WHOLESALE AND RETAIL DRUGGIST'S, SURGEON'S,  
AND DENTIST'S VALUER.

An Extensive Stock of Chemist's, Surgeon's, Dentist's, Grocer's,  
and other Trade Fixtures, Office Fittings, Utensils, &c.

ALL KINDS OF FIXTURES BOUGHT OR TAKEN IN EXCHANGE.

SHOW ROOMS AND OFFICES—

333 KINGSLAND ROAD.

FACTORIES—

2 DOWNHAM ROAD, KINGSLAND;

AND

WHITMORE ROAD, HOXTON, LONDON, N.

### INDEX TO ADVERTISEMENTS,

See Pages 21 and 22.



# GEORGE TREBLE & SON,

Druggists' Shops Fitted and Furnished complete with  
Fixtures, Bottles, Jars, Carboys, and  
Specie Jars by contract.

Plans and Estimates  
supplied.

**DRUGGISTS' SHOP FITTERS BY CONTRACT.**

OFFICES—

72, 74, 76, 78, & 80 CRONDALL STREET.

Steam Works—

44, 46, 48, 50 & 52 WHITMORE RD., & BRIDGE WHARF, REGENT'S CANAL,

## HOXTON, LONDON, N.

Agents—S. MAW, SON & THOMPSON, 7 to 12 ALDERSGATE, CITY.

### W. J. LEMAITRE & CO.,

OF 66 PENTONVILLE ROAD, N.,

Medical Shop Fitters and Show Case Makers,

HAVING PURCHASED THE WELL KNOWN BUSINESS AND STOCK OF

## FILMER KIDSTON,

Offers the whole of his well-made and seasoned Stock of

SHOP FITTINGS, SHOW CASES, SHOW JARS, CARBOYS, &c.,  
Including the KIDSTON'S HANDSOME

## PRIZE DISPENSING COUNTER,

At a Great Reduction for Cash, to make room for New Goods, at the Show Rooms,

DUKE STREET, BRUSHFIELD ST., BISHOPSGATE ST., LONDON.

## R. TOMLINSON,

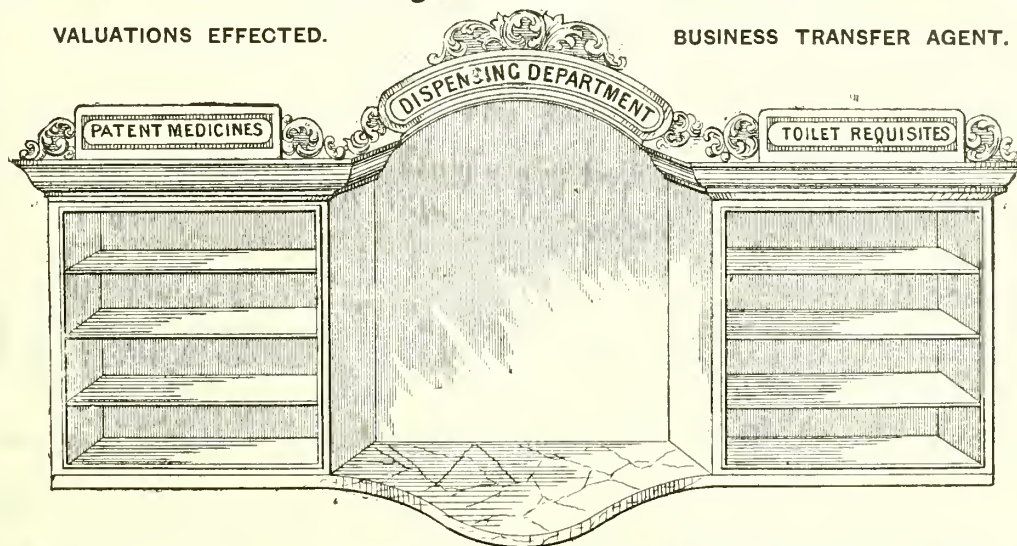
### DRUGGISTS' SHOP-FITTER, SHOW-CASE MAKER,

AND MANUFACTURER OF DRUGGISTS' SUNDRIES,

15 St. PAUL'S SQUARE, BIRMINGHAM.

VALUATIONS EFFECTED.

BUSINESS TRANSFER AGENT.



This Case is made of choice Mahogany, with Mirror in centre, and is lined at back with Black Enamelled Leather Cloth; it has Place-Glass Shelves, Glass Knobs on the Doors. Marble Slab in the Centre, and is fitted with Three Shelves at back. The Case is 6 feet long, 29 inches to cornice, 33 inches to top of tablets, and 36 inches to top of centre mirror.

For Export or easy transit it is admirably adapted, as it takes to pieces and can be fixed again in an hour. Packed into a Case 34 by 26, at a cost of 10s., 3s. of which is allowed if the empty is kept, and the full value allowed if returned carriage paid. Price, £25 10 c.

Second-hand Fixtures for Sale, Jars, Globes, Drawers, Bottles, Counter Glass Cases, Shelves, &c.

SECOND-HAND FIXTURES OF ALL KINDS BOUGHT AND EXCHANGED.

R. T. will wait upon parties fitting up, to plan and advise. 2nd-class fare only charged.  
FOR SALE, FIXTURES FOR SHOP ABOUT SIXTEEN FEET BY TWELVE. WRITE FOR LIST.

## CUNDALL'S CARBOLIC DRESSING FOR SEED CORN.

*Prevents the Attack of Rooks, Game, and Vermin. Prevents Smut in Wheat. Is Suitable for all Descriptions of Corn.*

Sold Retail at 3 6 per Gallon, Can included.

LIBERAL COMMISSION.

COMMANDS A READY SALE WHEREVER INTRODUCED.

AGENTS WANTED WHERE NOT REPRESENTED.

ROBT. CUNDALL & CO., POCKLINGTON.

## EDWIN HELLIAR, MANUFACTURING CHEMIST, YEOVIL,

Begs to call the attention of the trade to the following specialities, which will be found worthy of a place in the stocks of all Chemists, and the favour of an order, either direct or through the leading London Houses, will much oblige.

Fly Tick and Lear Powder, for dressing Sheep and	
Lambs .. .. .	in tins, 1/2, 3/6
Foot Rot Paste .. .. .	pots, 1/2, 2/6
Condition Powders for Horses .. .. .	tins, 2/6, 4/6
Canino or Dog Soap .. .. .	6d.
Worm Powders for Dogs .. .. .	6d.
Balsam Honey for Coughs .. .. .	7 1/2d., 1/11, 2/9
Vermin Killer .. .. .	3d., 6d., 1/

London Wholesale Agents:—HOVENDEN & SONS, BARCLAY & SONS, SANGER & SON, W. EDWARDS & SON. Exeter:—EVANS, GADD & CO.

USUAL TERMS.

## COOPER'S SHEEP DIPPING POWDER

Is soluble in Cold Water, and should be used in preference to any other Dip,

FOR TICKS, FLY, SCAB, AND FOR ALL OTHER SHEEP DIPPING PURPOSES.

This Dip has been in use upwards of 35 years, and has never been equalled by any other; it is of uniform strength, does not stain the wool, and is equally good as a Summer or Winter Dip. It is especially recommended for Dipping Lambs, and as a certain Cure for Scab.

In Packets to Retail at 1s. 4d. each, for 20 Sheep.

Counter Bills and Directions in English, Spanish, Dutch, &c., may be had free on application.

## COOPER'S FLY POWDER

For Preventing the Fly Striking Sheep & Lambs, Destroying the Maggot, &c.

In 1-lb. Packets, to Retail at 6d.; and in 2 1/2-lb. perforated Canisters, to Retail at 1s. 4d.

This Powder may also be had in Packets with a Label bearing the Retailer's own Name and Address, provided one gross or more be taken at once.

SPECIALLY LOW QUOTATIONS FOR QUANTITIES IN BULK.  
*Samples on application.*

Terms and further particulars may be had of the Proprietor,  
WILLIAM COOPER, M.R.C.V.S., Chemical Works,  
Berkhamsted, Herts.

## SPRATTS PATENT DOG MEDICINES AND SOAP. TASTELESS APERIENT BISCUIT FOR DOGS.

The *Field*, 28th January, 1882, says:—"The satisfactory results we obtained leave no doubt in our mind as to the value of the invention."

### "LOCURIUM"

(PATENT)

CURES ALL KINDS OF CUTS, BRUISES, AND WOUNDS IN MAN AND ANIMALS.

"SPRATTS PATENT," Bermondsey, S.E., or order through your Wholesale House.

Wholesale Agents for the Soap and Dog Medicines:—Barclay & Sons; Sanger & Sons; Sutton & Co.; F. Newbery & Sons; Lynch & Co., London; Raimes & Co., Edinburgh, York, and Liverpool; Ravensdale Mill Co., Dublin; Woolley, Sons & Co., Manchester; Taylor, Gibson & Co., Newcastle-on-Tyne; Goodall, Backhouse & Co., Leeds; and of all Wholesale Houses.

By Appointment to H.R.H.

## BIGG'S

the late Prince Consort.

## SHEEP AND LAMB DIPPING COMPOSITION,

*For Destruction of Ticks, Lice, &c., and Prevention of Fly.*

HAS NOW BEEN USED WITH GREATEST SUCCESS FOR NEARLY HALF A CENTURY.

PAMPHLETS ON APPLICATION.

LEICESTER HOUSE, GREAT DOVER ST., BOROUGH, LONDON.

In any Town where no Agent exists Chemists are requested to apply.

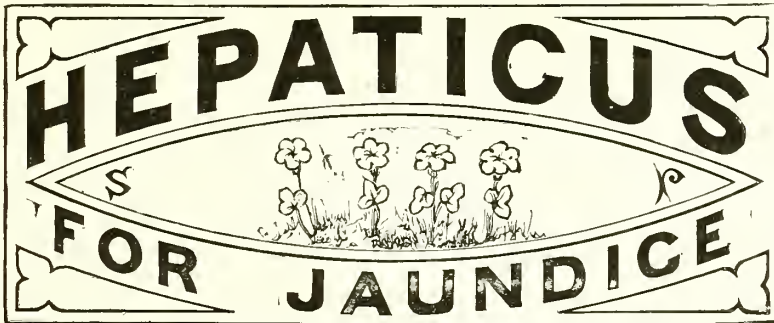
WHOLESALE AGENTS FOR CANADA AND UNITED STATES—

Sugden Evans & Co., Montreal, Canada, and Rouse's Point, New York.



# THE WONDERFUL HEALTH RESTORER!

Biliousness.  
Indigestion.  
Weakness.  
Sick Head-Ache.  
Loss of Appetite.



Nervous and  
Dyspeptic  
Affections.  
General Debility  
Spasms,

## AND ALL COMPLAINTS ARISING FROM A DISORDERED LIVER!

It quickly cures the above disorders of however long standing, **PURIFIES AND CLEANSSES THE BLOOD**, and gives to the system a healthy tone. **NO CHANGE OF DIET IS REQUIRED.** Those with weak constitutions may take it with entire confidence, it being adapted to all ages of either sex.

**Sold in Bottles 2s. 9d. each.**

In all Countries this Medicine is invaluable, but more particularly so in the Tropics, India, and all Hot Climates, and we particularly call the attention of Shippers and our friends in the Colonies and Abroad to it.

**For Terms apply to the Proprietors,—TOMLINSON & HAYWARD, Lincoln, England.**

*Trade Mark "Hepaticus for Jaundice" and an Hepaticus Plant as illustrated above.*

# THE "GLYCERINE DIP"

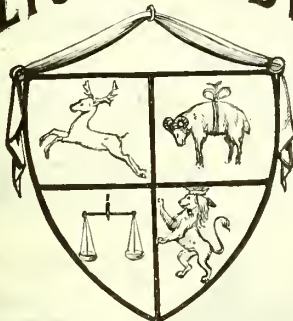
## IS THE BEST FOR SHEEP AND LAMBS. NON-POISONOUS.

An Infallible PREVENTION and CURE of SCAB, Effectually Eradicates TICKS or FAGS, RED LICE, INSECTS, and all other PARASITES infesting the Skins of Sheep and other Quadrupeds; Destroys MAGGOTS, renders the Skin Healthy after attacks by the FLY; it Cures and Prevents FOOT and MOUTH DISEASE, FOOT-ROT, and other Contagious Diseases; Heals RAW WOUNDS, and is especially useful as a DRESSING for CUTS during and after the process of SHEARING; Greatly Promotes the GROWTH of the WOOL, as also Increasing the Weight and Improving the Quality of the Fleece.

**Can be used with Cold Water.**

The "GLYCERINE DIP" is an excellent Wash for Horses (cures Harness Galls and Sore Backs), Cattle, and Dogs. Killing all Fleas and Curing all kinds of Skin Diseases and Sweetening the Skin.

**GLYCERINE DIP**



**TRADE MARK.**

None is Genuine unless bearing this  
Trade Mark.

*Sold in Tins of 5 lbs. and 10 lbs., and  
Drums of 20, 30, 40, 50, and 100 lbs.*

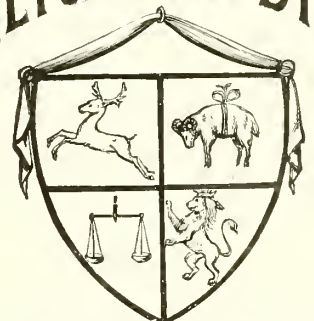
**Price 6d. per lb.**

**1 lb. for every 5 Sheep or 6 Lambs.**

**BEWARE OF IMITATIONS & FALSIFICATIONS.**

**CAUTION.**—We have the sole right and Proprietorship of this Title and Mark, and we shall at once commence actions against any person or persons imitating, or otherwise pirating them, and we beg to caution Merchants and Buyers against such imitations.

**GLYCERINE DIP**



**TRADE MARK.**

**SOLE PROPRIETORS AND MANUFACTURERS,**

**TOMLINSON & HAYWARD, Lincoln, England.**

**TESTIMONIAL from NICHOLAS LOWE, Esq., ALTAMIRA, Mercedes, Buenos Ayres, October 22, 1880.**

To Messrs. MOORE & TUDOR.—In reply to your letter of the 18th, I am thankful for your congratulations on the sale of my wool at \$135 per ar. I have sold another lot at \$140, and I attribute the success of placing wool worth these prices in market to having cured the flocks of Scab. There are several remedies more or less efficacious and cheap. I use only the "Glycerine Dip" imported by you, and I am well satisfied with the result it gives. I have no objection to your making the fact public. My neighbour, Mr. William Cleary, also uses the "Glycerine Dip," and he obtained a Silver Medal Prize, at the Paris Exhibition of 1878. Several others who use the same Dip are satisfied with it, and promise to continue patronising the "Glycerine Dip."

*Applications for Agencies invited in those countries where we are not already represented.*

REGISTERED

# SOLUBLE FIR-TREE OIL INSECTICIDE.

For destroying all insects and parasites that infest fruit trees and plants, whether at the roots or on the foliage—such as green and black fly, thrip, red spider, American blight, scale and mealy bug, and caterpillars on gooseberry trees and cabbages, &c., &c. Full directions for use on each bottle.

**FIR-TREE OIL** will cure ringworm, itch (scabies), and nearly all skin diseases, especially those produced by parasites and fungoids, when applied full strength with a brush or sponge once a day.

**FIR-TREE OIL** diluted with water will destroy lice, fleas, and all parasites which affect animals.

**FIR-TREE OIL** diluted with water stands unrivalled as a wash for dogs and other animals intended for show.

Sold in Bottles...1/6, 2/6, 4/6, 7/6, and 12/6 each.  
Wholesale .....12/, 20/, 36/, 66/, and 120/ doz.

WHOLESALE.—BARCLAY & SONS, and EDWARDS & SONS, London;  
RAIMES & Co., Edinburgh and York; EVANS, SONS & Co., Liverpool;  
and D. McLAREN, Edinburgh.

MANUFACTURER :—

**E. GRIFFITHS HUGHES,**  
OPERATIVE CHEMIST,  
VICTORIA STREET, MANCHESTER.

## MYOCOM FLY GUM, FOR CATCHING FLIES.

THE SUCCESS OF THE LAST THREE SEASONS.

Sold in 1s. Boxes by all Chemists and Grocers, or a Sample can be obtained as under by post for 1s. 2d.

LIBERAL TRADE TERMS.

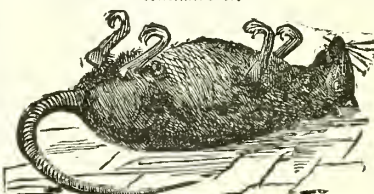
**THOS. CHRISTY & CO., 155 FENCHURCH ST.,  
LONDON.**

## 100 Rats destroyed for a Shilling by BARBER'S PHOSPHOR PASTE.

WRAPPED NEATLY FOR THE COUNTER.

Handsome attractive Posters supplied; if conspicuously placed will command constant sale.

Kills Rats, Beetles,  
&c. &c.  
THE DEAD UP  
DRY  
WITHOUT SMELL.



Guaranteed the best  
destroying Paste in  
the world.

3d., 6d., 1s., 2s. 6d., and 5s. Tins. Also

## BARBER'S VERMIN KILLER.

SOLD THROUGHOUT THE WORLD.

Kills Mice upon the spot. In packets, 3d., 6d., and 1s.

Be not deceived with worthless imitations. Observe the Name !!!

The VERMIN KILLER sent free by post at the following prices:

2d.	3d.	6d.	1s. 0d.
1s. 0d.	1s. 6d.	3s. 0d.	6s. 0d. .. Per Dozen.

The PHOSPHOR PASTE, at same prices. Carriage paid per rail for enclosure to any Wholesale House, or direct, for quantity of either Paste or Killer.

Special arrangements are made for Sole Agency with Chemists.

**WORKS. SALISBURY: ESTABLISHED 1848.**

Special Quotations to Shippers. Supplied by all the London Wholesale Houses.

# DRUGS, CHEMICALS & PHARMACEUTICAL PREPARATIONS. OLDFIELD, PATTINSON & CO.

(Late WILLIAM MATHER),

WHOLESALE AND EXPORT DRUGGISTS,

37 LONG MILLGATE, MANCHESTER.

**SPECIALITIES.**—Concentrated Infusions, Liquors and Decoctions, Soluble Essences of Ginger Capsicum, Ginger Ale, Lemon, Orange, &c., for the Mineral Water Trade.

## DALMATIAN INSECT FLOWERS AND POWDER.

PRICE LIST CAN BE HAD ON RECEIPT OF BUSINESS CARD.

WHEAT SOWING SEASON, 1882.

## WILLIAM COOPER,

Chemical Works, Berkhamsted, Herts,

RESPECTFULLY SOLICITS EARLY ORDERS FOR THE FOLLOWING :—

Cooper's Wheat Dressing ... 3s. 6d. per doz.

Cooper's Carbolic Seed Protector ... 4s. 0d. "

Cooper's Powdered Vitriol (1-lb. packets) 2s. 0d. "

Subject to 5 per Cent. Discount for Cash at fourteen days.

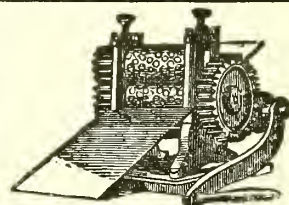
Carriage Paid upon orders of not less than one gross, which may be assorted.

HANDBILLS, POSTERS, &c., FOR THE ABOVE CAN BE HAD FREE ON APPLICATION.

ESTABLISHED



1835.



ESTABLISHED



1835.

THE ONLY PRIZE for Confectioners' Machines at the International Exhibition of 1862; Paris, 1867; Lima, Peru, 1872; London, 1873; and Philadelphia, 1876, was awarded to

## L. COLLIER,

WELLINGTON WORKS, River Street, ROCHDALE,  
MANUFACTURER OF ALL KINDS OF

**MACHINES FOR CONFECTIONERS AND BISCUIT BAKERS.**

An Illustrated Catalogue sent free on application.

Index to Advertisements,  
Pages 21, 22.



# HORSE, CATTLE, AND SHEEP MEDICINES.



By Special Warrant,  
Dated 27th December, 1865.

BY ROYAL APPOINTMENT.



By Special Warrant,  
Dated 10th February, 1866.

## DAY, SON & HEWITT,

INVENTORS AND SOLE PROPRIETORS OF THE

### "ORIGINAL" STOCK BREEDERS' MEDICINE CHESTS,

For all Disorders in Horses, Cattle, Calves, Sheep, and Lambs.

Patronised for over 40 years by Royalty, and the principal Stock Breeders, Horse Proprietors, and Agriculturists of the British Empire.

The No. 2 MEDICINE CHEST contains the following matchless remedies:—

"CHEMICAL EXTRACT," for all External Injuries, and Ewes Lambing.

"GASEOUS FLUID," for Colic, Scour, or Diarrhoea, and Debility.

"RED DRENCH," for Cleansing Cows and Ewes, and for Inflammation.

"RED PASTE BALLS," for Mares after Foaling, and Conditioning Horses.

"BRONCHOLINE," for Husk or Hoose in Sheep, Lambs, and Calves.

"GASEODYNE," for Heaving and Paining, "CARMINATIVE CHALK," &c.

Price of Chest, with Guide to Farriery, £2 16s. 6d. No. 1 Complete Medicine Chest, in Polished Case, £6 6s. Horsekeeper's Chest, No. 4, £2 17s. 6d.

CARRIAGE PAID TO ALL PARTS OF THE BRITISH ISLES.

Admirably adapted for all ordinary ailments among Stock, and each preparation can be had separately. Full and easy directions enclosed.

Awarded "Certificate of Merit" by the National Agricultural Society of Victoria, Australia, 1871; President's Medal, Spalding, 1872; Silver Medal, Manchester and Salford Show, 1874; Silver Medal, Preston, 1875; Silver Medal, Northamptonshire Agricultural Society, Stamford, 1875; Silver Medal, Cheshire Agricultural Society, Crewe, 1875; Special Prize, National Agricultural Society of Victoria, Australia, 1875; Medal, Cheshire Agricultural Society, Chester, 1876; Silver Medal, South African Exhibition, Cape Town, 1877; Silver Medal, Northumberland Agricultural Society, Newcastle-on-Tyne, 1877; Silver Medal, Knutsford, 1878; Medal, North Berwick, 1878; Medal, Dairy Show, London, 1878; Silver Medal, Derby, 1879; Silver Medal, Wellingborough, 1879; Medal, Benthams, 1880; Medal, Melbourne Exhibition, 1880; and Silver Medal, Stourbridge, 1881.

CAUTION.—Beware of Imitations, and see that the name of DAY, SON & HEWITT is on all Bottles and Packets.

Prepared only by DAY, SON & HEWITT, 22 DORSET STREET, BAKER STREET, LONDON, W.

And sold by Messrs. Burgoyne, Burdidges & Co., Barclay & Sons, W. Edwards, Newbery & Sons, Sanger & Sons, and all Wholesale Druggists, in London; Hood & Co., Melbourne; Kempthorne, Prosser & Co., Dunedin and Auckland; Fairthorne & Co., Launceston.

## HORSES.—LIEUT. JAMES' BLISTER

(Manufactured by R. J. JAMES, the Grandson of the Inventor).

THIS CELEBRATED BLISTER IS NOW OFFERED TO THE TRADE AT THE FOLLOWING REDUCED PRICES:—  

1 oz. pots from	14/- per doz. to	12/6 per doz.	1 lb. pots from	£4 4 0 per doz. to	£4 0 0
2 "	£1 5 6 "	£1 3 0 "	1 "	7 16 0 "	7 10 0
4 "	2 8 0 "	2 4 0 "			



Observe the Trade Mark.—"A Horse's Head on the top of each Pot, and the signature, R. J. James."

Wholesale Agents, BUTLER & CRISPE, 4 Cheapside; NEWBURY, 37 Newgate Street; MAW, SON & THOMPSON, 11 Aldersgate Street; HAYES & Co., Dublin; GOULDING, Cork; FOGGITT, Thirsk; and SANG & BARKEN, Edinburgh. Agents for the Colonies required. Apply, with reference, to R. J. JAMES, 15 Union Bank Buildings, Ely Place, London, E.C.

JAMES v. JAMES.—LORD ROMILLY, the Master of the Rolls, on February 23, 1872, declared "that I had an equal right with other members of the Inventor's family possessing the receipt to make and sell this Blister."—R. J. JAMES.

## ESTABLISHED 1833. HORSES.—LIEUT. JAMES' BLISTER.

### CAUTION.

The annexed Label is at the top of every Pot of the ORIGINAL and only GENUINE BLISTER.

The Messrs. Barclay & Sons, 95 Farringdon Street, London, and Messrs. Raimes & Co., Edinburgh, Liverpool, and York, are now and have been Agents 45 years.



AGENTS:—Sutton & Co., 10 Bow Churchyard; W. Edwards & Son, 167 Queen Victoria Street; Newbery & Son, 37 Newgate Street; Evans, Lescher & Evans, Bartholomew Close; Burgoyne, Burdidges & Co., 16 Coleman Street; Lynch & Co., 171A Aldersgate Street; W. Mather, Farringdon Road, London, and Manchester; Tidman & Son, Wilson Street; Sanger & Son, 150 Oxford Street; Millard & Sons, 40 Charterhouse Square; Corry & Soper, Shad Thames; A. A. Campbell, Leadenhall Street, London; Woolley, Sons & Co., 59 Market Street, Manchester; Apothecaries' Company, Virginia Street, Glasgow; Boileau & Co., Bride Street, Dublin; McMaster & Co., 121 & 122 Capel Street, Dublin; Hunt & Co., 17 Westland Row, Dublin; Clarke & McMullen, Victoria Street, Belfast; D. Galbraith, Londonderry. And by all Chemists, in Pots, 1/6, 2/9, and 5/-.

COLONIAL AGENTS:—MELBOURNE and WELLINGTON: Felton, Grimwade & Co.; SYDNEY, BRISBANE, and LAUNCESTON: Elliott Bros. & Co.; DUNEDIN and AUCKLAND: Kempthorne, Prosser & Co.; CALCUTTA: Smith, Stanistreet & Co.

W. H. JAMES, Sole Manufacturer, STANFORD, FARRINGTON, BERKS. Advertiser in "Bell's Life" 45 years. Beware of Spurious Imitations.

## NOTICE.

In consequence of the great reduction in all Patent Medicines, the Proprietor has determined to reduce the Wholesale Prices of following Articles, viz.,

	Per doz.	Retail.
TAYLOR'S Condition Balls.....	24/-	3/-
Ditto ditto .....	12/6	1/9
TAYLOR'S Condition Powders .....	18/-	2/6
TAYLOR'S Cough Powders.....	18/-	2/6
TAYLOR'S Cleansing Drinks.....	5/-	(No retail price.)
TAYLOR'S Foot Rot Mixture.....	7/-	1/-
Ditto ditto .....	14/-	2/-
Ditto ditto .....	28/-	3/6

SUBJECT TO THE USUAL DISCOUNT.

T. TAYLOR would call especial attention of the Trade to his "Cleansing Drinks," 5s. per dozen. They are put up in neat Packets, and save the Chemist immense trouble. If preferred, the Drinks can be had without the word "Taylor's"—only "Cleansing Drinks"—thereby enabling the Chemist to affix his own slip label; but to secure this, when ordering ask for those with the pink label.

NO RETAIL PRICE AFFIXED.

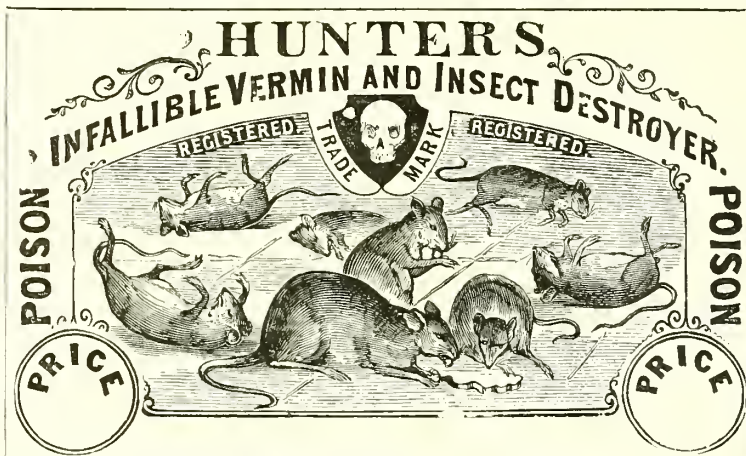
Prepared by THOMAS TAYLOR, M.R.C.V.S., Derby, and to be had from all the Wholesale Houses, or direct in gross boxes at £3 per gross, less 20 per cent. cash (carriage paid).



# "HUNTER'S" INFALLIBLE VERMIN DESTROYER.

"The Best Extant."

The enormous sale last year of this old-established article, and the few specimens of testimonials below, stamp it as undoubtedly "the best extant." It is very neatly and very carefully put up throughout, and is indeed a most satisfactory article in



Thirty-five years' Reputation.

every respect, proof of which lies in the fact of its having — although not constantly advertised — steadily maintained its reputation as such, ever since its introduction to the trade and the public, now about thirty-five years ago.

## "CANNOT BE EXCELLED."

From Mr. Smith, Chemist, Glasgow:—"I have not kept any other Vermin Killer than yours for the last four years. It is the best I ever sold." From Mr. Geo. Eagle, Merrickville, Sydney, Australia, to Mr. Mitchell, Druggist, Pitt Street, Sydney:—"Sir, I promised to let you know how 'Hunter's Vermin Destroyer' acted. Its effect was wonderful; in one night it destroyed all the rats and mice about my house, which was swarmed with them."

From Mr. A. Billington, Chemist, Wakefield: August 28, 1878:—"Dear Sir, Please send me a few of your Vermin Killer Registers. I can bear testimony to the deadly effect of your 'Killer,' having one night laid in my warehouse the contents of a 2d. packet, and found in the morning no fewer than forty dead mice."

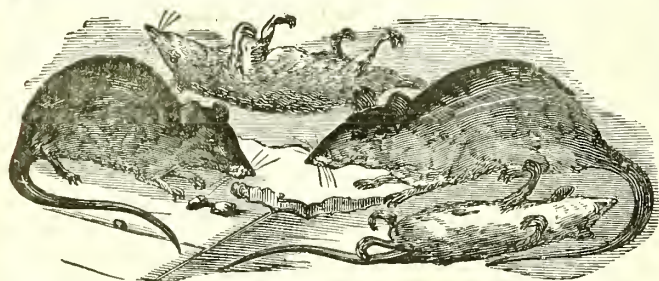
## VIDE TESTIMONIALS.

From Messrs. P. Smith & Co., Chemists, Runcorn, October, 1880.—"In our opinion your 'Destroyer' is the best extant." From Mr. James Froud, Chemist, Dorchester:—"Your poison succeeds to admiration. It is as effective as an infernal machine." From Mr. Jas. Thompson, Low Heskett, near Carlisle, to Mr. R. T. Pattinson, Chemist, Carlisle:—"Sir, You can with confidence recommend 'Hunter's Vermin Destroyer.' It is the best thing I ever used, having often cleared stack-yards of both rats and mice in a day or two." From Mr. Edward Thornton, Chemist, Lyme Regis:—"I can bear testimony to the efficacy of your 'Killer.' Parties who have purchased it of me say that it is the best they have tried. Mice are rapidly destroyed by it, and it quite answers the description you have given of it."

Kept in Stock by all the Wholesale Houses in the Trade throughout the United Kingdom. Vide Trade Lists, &c.

LABORATORY—WESTGATE & UNION STREET, DEWSBURY, ENGLAND.

## BATTLE'S VERMIN KILLER. { Mice eat it readily, and Die on the spot.



Has an immense Sale, and wherever introduced never fails to give satisfaction. Mice appear attracted to it as by magic, eat it readily, tumble over, and die on the spot. Rats usually die in their runs. Parties troubled with Vermin may be cleared at once, either from Stacks, Houses, or Ships.

TESTIMONIALS.—Thousands might be published.

From Mr. THOMAS COLTON, Agent for Selby.—A friend of mine purchased a Packet of your VERMIN KILLER last night, doubting its efficacy; to-day he called in to say that he had found fifteen dead mice, and had only used part of a packet. From Mr. EDWARD STURDY, Flemington Mills.—I duly received by post the Packet of your VERMIN KILLER, and found it as represented in your advertisement. It speedily destroyed all the mice in my granary. I enclose 2s. for two more Packets.—Leeds, November 6th, 1881.—I have tried BATTLE'S VERMIN KILLER, and have found it most effectual in clearing my premises of LARGE QUANTITIES OF RATS.—THOMAS S. CROSLAND.—Mr. Stead.

Sold in Packets, 3d., 6d., and 1s. each.

SOLE PROPRIETOR:

Mr. J. R. BATTLE, Chemist, Lincoln, England.  
No Chemist or Storekeeper should be without a supply.

POISON VERMIN POISON

FOR THE EFFECTUAL DESTRUCTION

TRADE MARK

SUDDEN DEATH

OF RATS & MICE

PRICE

F. CRAVEN Chemist DEWSBURY.

PRICE

CHEMISTS PUBLISHING ALMANACS

SHOULD WRITE FOR AN

ADVERTISEMENT

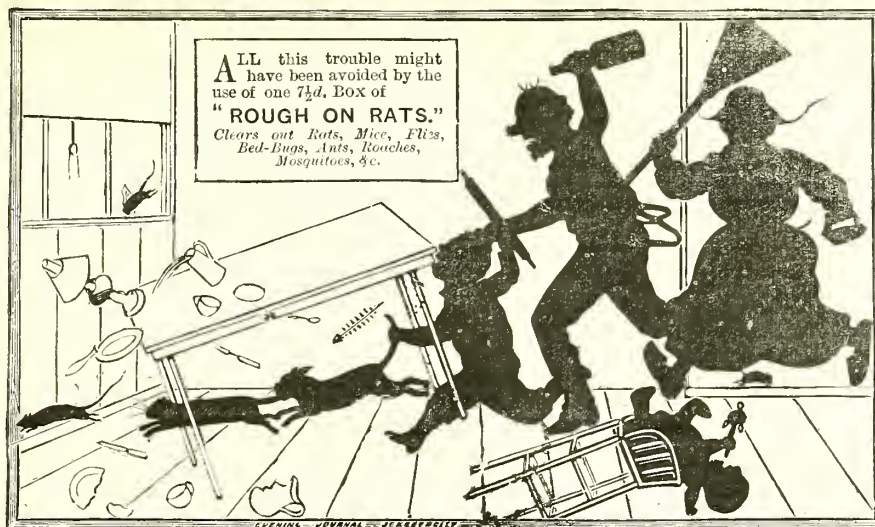
TO

F. CRAVEN,

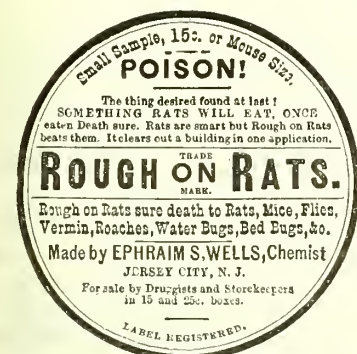
CHEMIST, DEWSBURY.



Clears out Rats, Mice,  
Roaches, Flies, Ants, Mosquitoes,



Bed-Bugs, Insects, Skunk, Weasel,  
Beetles, and all Vermin.

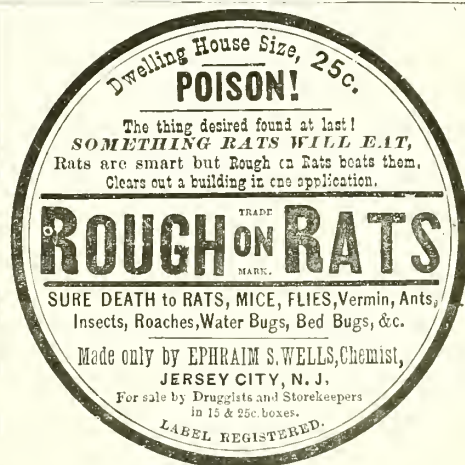


7 1/2 d.; 4s. 10d. doz.

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SEND FOR  
Advertising Matter—  
your Name on.

BUY OF  
Your Wholesale  
Druggist.



1s.; 7s. doz.

No loss by breakage,  
leakage, or evaporation.

Will keep a thousand  
years in any climate.

No Grease to soil the  
drawers or other goods.

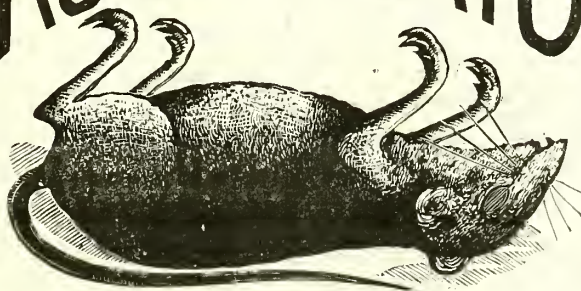
Used for Insects, Bugs,  
&c., as well as for Rats  
and Mice.

Always does the work.

Lowest price of its  
kind.

Pays better than any  
other.

ADVANTAGES OF  
**ROUGH ON RATS**



CAREFUL  
DRUGGISTS,

Who do not sell arsenic  
and strychnine indis-  
criminately, and yet do  
not wish to incur dis-  
pleasure of Patrons by  
absolute refusal, can offer  
7 1/2 d. boxes of

"ROUGH ON RATS"  
as a compromise sub-  
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MAY BE OBTAINED FROM THE PROPRIETOR,

**E. S. WELLS, Jersey City, New Jersey, U.S.A.;**  
**F. NEWBERRY & SON; MAW, SON & THOMPSON; BARCLAY & SONS, London;**  
AND ALL OTHER WHOLESALE HOUSES.




Established 1877.

THE  
CHEAPEST  
OF ALL.

TRADE PRICES.

RED ...	...	...	1s. size,	4s. Dozen.
" ...	...	...	2s. "	8s. "
			4	12

GREEN	...	...	6d.	3s. 6d.
"	...	...	1s.	7s.
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	<b>CONDY'S</b>	OZONISED WATER ...	2s.	8s.
"	"	" ...	3s. 6d.	16s.

OF ALL WHOLESALE HOUSES.      WHOLESALE DISCOUNTS ON APPLICATION.

 **R. CONDY & CO.,** DISINFECTING FLUID MAKERS,  
FORD'S FOLLEY, LONDON, S.W.

# CHLORIDE OF LIME.

IN WATERPROOF, AIR-TIGHT, & ODOURLESS PACKAGES. *Protected by Royal Letters Patent.*

Is neat and clean, and convenient for use. Being air-tight and odourless, retains its strength unimpaired.

IT IS ADMIRABLY ADAPTED FOR EXPORT, AND WILL  
KEEP FOR YEARS IN ANY CLIMATE. Per lb

KEEP FOR YEARS IN ANY CLIMATE.		Per Box,
<b>24-lb. BOXES, containing 24 1-lb. Packages</b>		<b>6/6</b>
Ditto ditto 48 $\frac{1}{2}$ -lb. ditto		7/0
Ditto ditto 96 $\frac{1}{4}$ -lb. ditto		8/0
Ditto ditto 1-lb., $\frac{1}{2}$ -lb., & $\frac{1}{4}$ -lb., assorted		7/3
Ditto ditto 1 Gross Penny Packages		8/0
		Per Case,
<b>50-lb. CASES, containing 50 1-lb. Packages</b>		<b>13/0</b>
Ditto ditto 10 5-lb. ditto		13/0
Ditto ditto 100 $\frac{1}{2}$ -lb. ditto		14/0
Ditto ditto 200 $\frac{1}{4}$ -lb. ditto		16/0
Ditto ditto 1-lb., $\frac{1}{2}$ -lb., & $\frac{1}{4}$ -lb., assorted		14/6

Also in 1 cwt. and  $\frac{1}{2}$ -cwt. Cases, to meet the requirements of large buyers and the Export Trade.

Packed also in Jars, Bottles, Casks, and Cases to order.

Packed also in Jars, Bottles, Casks, and Cases to order.  
The Patented Composition for Export Orders is specially prepared to  
bear any Climate.

**A Liberal Discount** allowed on all Orders of  
5 Cases or 10 Boxes and upwards.


SPECIAL QUOTATIONS FOR CONTRACT OR LARGE ORDERS.

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**EXPORT, AND WILL**  
**CLIMATE.** Per Box,  
 res .....6/6  
 .....7/0  
 .....8/0  
 b., assorted .....7/3  
 Packages .....8/0

Per Case,  
 ges .....13/0  
 .....13/0  
 .....14/0  
 .....16/0  
 b., assorted .....14/6  
 irements of large buyers

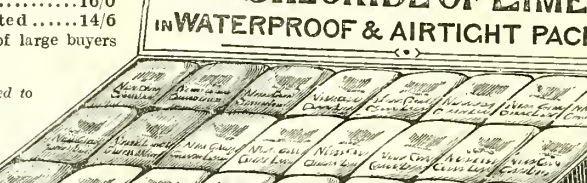


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### CHLORIDE OF LIME

IN WATERPROOF & AIRTIGHT PACKAGES.

to order.  
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 ORDERS,



## NATIONAL CHEMICAL CO.

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A SAMPLE BOX OR CASE CAN BE HAD FROM ANY OF OUR WHOLESALE AGENTS OR ANY LONDON OR COUNTRY WHOLESALE DRUGGISTS. ALL GOODS DELIVERED FREE IN LONDON.

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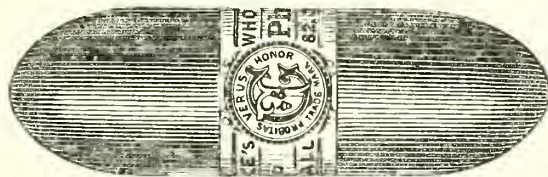


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## GABRIEL &amp; TROKE,

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# GABRIEL & TROKE'S REGISTERED CAPSULED HORSE BALLS,



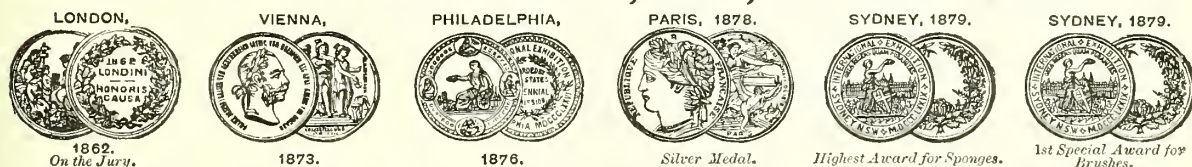
Manufactured solely by GABRIEL & TROKE,  
WHOLESALE DRUGGISTS, 82 CITY ROAD,  
LONDON.

MANUFACTURERS OF ALL VETERINARY PREPARATIONS, EVERY KIND OF  
VETERINARY INSTRUMENTS AND SUNDRIES.  
SAMPLES AND SPECIAL QUOTATIONS FOR LARGE BUYERS.

The superior advantages of these Balls are obvious. The mass is confined in a hermetically sealed gelatinous Capsule, perfectly harmless, and immediately dissolved in the stomach. The Capsule will not only prevent the Ball from getting dry and hard, but will preserve its purity and power for any reasonable time, and ensure the effectiveness of the medicine—especially when such drugs as Camphor Ammonia, or Essential

Oils are prescribed. These Capsuled Balls are most convenient and safe and well adapted for export, keeping good in any climate. They are put up in Boxes of 1 dozen each. Capsuled Balls of the most approved formula on hand, and private recipes faithfully and accurately dispensed. Shipping orders promptly and carefully executed, and at lowest market prices. Price Lists of a very extensive character in the most handy referable style on application.

## MELBOURNE EXHIBITION, 1881, SILVER MEDAL.



# G. B. KENT & SONS, LONDON

WAREHOUSES—  
11 Great Marlborough  
Street, W.

## BRUSHES

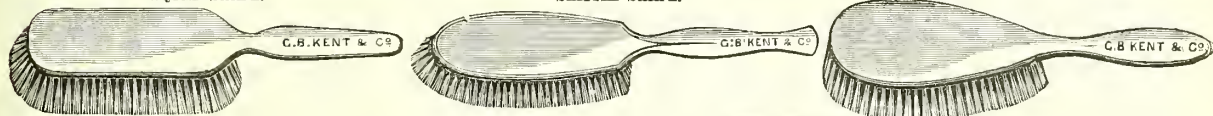
### KENT'S HAIR BRUSHES

FACTORIES—  
Bonner Road, Victoria  
Park, E.

SQUAB SHAPE.

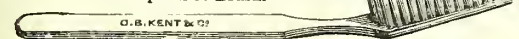
SKITTLE SHAPE.

BALLOON SHAPE.



## KENT'S TOOTH BRUSHES

Are manufactured at their Factory at  
Victoria Park, expressly set apart for this  
one description of Brush.



Price per doz.

First Quality	G.B. Kent & Co		London	6/6
Second Quality	Imperial		Quality	5/0
Third Quality	WARRANTED		LONDON	4/1
Fourth Quality	WARRANTED		SECURE	3/1
Fifth Quality	WARRANTED		SOUND	1/1

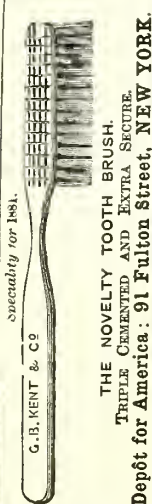
Badger Hair Tooth Brushes .. 4/5 6/0 8/0 11/6 per doz  
Children's " .. 3/0 3/6 4/0 ..  
Tooth Brush Guards .. Metal, 2/3 Porcelain, 4/6 ..  
Japanned Wet Brush Holders .. 3/0 5/6 6/0 13/0 ..

KENT'S CLOTH BRUSHES in WOOD or IVORY.

KENT'S HAT BRUSHES in WOOD or IVORY.

KENT'S FLESH BRUSHES, Handled or Webbed.

KENT'S SHAVING BRUSHES in Badger Hair, 'c. c.

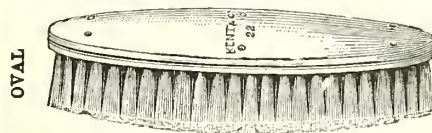


THE NOVELTY TOOTH BRUSH.  
TRIPLE CEMENTED AND EXTRA SECURE.  
Depot for America: 91 Fulton Street, NEW YORK.

## KENT'S NAIL BRUSHES.



Bent Back	..	..	4/0	7/0	8/6	10/6	12/0	14/0
Round End	..	..	4/0	7/0	8/6	11/0	13/0	15/0
Roached Grooved	..	..	19/0	24/0	28/0	32/0	36/0	40/0



	No. 22-0	22	23	24
	8/8	13/0	17/6	22/0
Handled Nail Brushes ..	4/0 4/6 7/0 8/0 10/6 12/0 16/0	per doz.		
Wood " Trepanned	12/0 16/0 18/0 21/0 24/0 27/0	"		
" Fibre	21/0 27/0 30/0 36/0 42/0 48/0 54/0	per grs.		

KENT'S FITTED LEATHER CASES of various descriptions.

KENT'S HAND MIRRORS in Wood and Ivory.

KENT'S COMBS in Ivory, Shell, Indiarubber, &amp;c.

KENT'S "NOVELTY" TOOTH BRUSH GUARD.

(Telescope pattern, silver-plated.)

G. B. KENT & SONS' Illustrated Price List will be forwarded by post on application.



"THE MOTHER BRAND."



TRADE MARK (REGISTERED).

Sold in Cases of Two Dozen Tins.

Should any Chemist be willing to stock the above, Messrs. R. Lehmann & Co. will have much pleasure in furnishing him with samples, accompanied by introductory letter, for each of his medical men, free of charge. Write to

**R. LEHMANN & CO.,** Sole Importers, 106 FENCHURCH ST., LONDON, E.C.

# ETTLI'S FOOD

(SWISS MILK FOOD),  
FOR INFANTS, CHILDREN, AND INVALIDS.

Used in all the Leading London and Country Hospitals for Children.

"By its use infant mortality should be reduced to a minimum."—R. S. G., M.D.  
"I have ordered Ettli's Food invariably with benefit."—C. T. B., M.D.  
"Infants and children thrive on it marvellously."—S. B., M.D.  
"It is the best form of artificial food I have yet had occasion to try."—  
W. C. G., M.D.

Medical Opinions.

See *The Lancet*, 11th March, 1882, for full Testimonials.

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R. HOVENDEN & SONS,		
BARCLAY & SONS,		
W. SUTTON & CO., Bow Churchyard		
S. MAW, SON & THOMPSON,	}	EDINBURGH.
DUNCAN, FLOCKHART & CO.,		
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PREPARED BY THE SWISS MILK AND FOOD COMPANY

**M. A. CRAVEN & SON,**  
**WHOLESALE AND EXPORT CONFECTIONERS,**  
MAKERS OF  
Medicated Lozenges, Refined Liquorice, Jujubes, and every description of Confectionery,  
IMPORTERS AND MANUFACTURERS OF LEMON, ORANGE, AND CITRON PEELS.  
**EBOR CONFECTIONERY WORKS,**  
**YORK.**

Lozenges of all descriptions made from Customers' private formulæ (or ingredients), and stamped with any name or device.

SPECIALITIES—Cough, Peppermint, Rose, Musk, Boquet, Cachou, and all kinds of Medicated Lozenges.  
ESTABLISHED 1843. PRICE LIST ON APPLICATION.

**LÉON CLERC,**  
**THE FIRST REFINER OF BENZOLINE IN ENGLAND.**  
BURNING & SOLVENT NAPHTHAS at Market Quotations.  
Importer of PETROLEUM OIL, Choice Brands only; SOREL'S FRENCH COLZA, guaranteed Pure; GROUND NUT OILS, for Frying, Making Hair Oil, &c.  
LUBRICATING OILS, from 1s. 6d. to 3s. per gallon. Highly Recommended.  
Manufacturer of LAMPS of all Descriptions, Globes, Chimneys, Wicks, Cans, Wood Taps, Galvanized Pails, Baths, Wash-ups, Watering Cans, &c.  
**EMPTY BARRELS—Best Prices given throughout the Year.**

QUOTATIONS AND DRAWINGS SENT FREE ON APPLICATION.

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**MR. GLADSTONE ON MR. PERCY'S DANDELION COFFEE.****MANUFACTORY: RIVER STREET, TRURO, AND AT KENSINGTON, LONDON.**

**PERMISSION** Granted to T. B. PERCY to continue the Manufacture of his **DANDELION COFFEE** without interfering in any way with the Mixture as certified by J. H. COLLINS, Esq., F.G.S., Public Analyst for the County of Cornwall and City of Truro.

[Copy.]

**OFFICIAL LETTER.**

10 Downing Street, Whitehall, London, May 17th, 1882.

Dear Sir,—Mr. GLADSTONE desires me to say, with reference to the letter of Mr. Percy, which you sent here on the 15th inst., that the Board of Inland Revenue will not interfere with his manufacture of Dandelion Coffee if the proportions stated by him are adhered to and the duty thereon duly paid.—I am, dear sir, yours faithfully,  
To A. Pendarves Vivian, Esq., M.P. J. A. GODLEY.

Warranted the Best Article of the kind in the Market. Sold in tins, at 3d., 6d., 9d., 1s., and 1s. 6d., each, by all dealers in Coffees. A Valuable Agency. Special Terms to Large Buyers.

**ALL COMMUNICATIONS TO BE ADDRESSED TO THE MANUFACTORY, TRURO.****20s. for a QUARTER-CASK,***i.e., 12½ GALLONS (CASKS FREE), of***TYRER'S "BOROUGH" KETCHUP.**

The following Editorial Notice is taken from the "Chemists' Journal."

"We have thoroughly tested Mr. Tyrer's 'Borough Ketchup,' both in the laboratory and in the kitchen. Viewed under the microscope with a power of 450 diameters, the 'Borough Ketchup' presents the appearance of a homogeneous dark brown liquid. Passed through a greased tipped filter very little sediment was deposited. A microscopical examination of this deposit under the same power showed most conclusively that Mr. Tyrer's preparation is free from the 'mashed up toast,' 'decayed fish,' 'mildew,' and 'broken twigs,' found by Mr. G. Worthington Smith, the distinguished mycologist, in the common ketchup sold in London. The proof of the pudding, however, is in the eating, and whether taken alone or in sauces we can personally testify that Mr. Tyrer's 'Borough Ketchup' is delicious, and that it would puzzle the finest palate to discover any difference between it and the finest brands in the market. As a legitimate article for sale, especially in the provinces, we heartily recommend Mr. Tyrer's pleasant condiment."

A Sample Gallon (bottle free) sent, carriage paid, within Carter Paterson's radius on receipt of 2s. 6d., or to any wholesale house in London for enclosure.

**PETER TYRER, 70 Long Lane, Borough, LONDON, S.E.**

CHEQUES AND P.O. ORDERS TO BE CROSSED, "CENTRAL BANK."

[Please mention this paper.]

Gold Medal, Paris, 1878.

First Degree of Merit and Medals, Sydney, 1880, Melbourne, 1881.

**FRY'S COCOA EXTRACT**

Is guaranteed to be perfectly pure Cocoa only, the superfluous oil extracted

"If properly prepared, there is no nicer or more wholesome preparation of Cocoa."—DR. HASSALL.

"Strictly pure, and well manufactured in every way."—W. W. STODDART, F.I.C., F.C.S., City Analyst.

Try also FRY'S CARACAS COCOA.—"A delicious preparation."

**J. S. FRY & SONS, BRISTOL AND LONDON.****GIBSON'S****DELECTABLE JUJUBES, VOICE JUJUBES, AND GLYCERINE PASTILLES**

Pnt up in 4-lb. Decorated Tins with Glass Lids, TINS FREE, are now being inquired for by buyers from all parts of the world. They are not surpassed in quality by any maker, and give entire satisfaction.

**MEDICATED and HIGH-CLASS LOZENGES, of every kind.**

Sent out in 2-lb. or 4lb. Bottles, Bottles Free; or in 10 lb. upwards.

**LIME JUICE TABLETS.****PURE MALT TABLETS.****ACID DROPS, AND BEST QUALITY BOILED SUGARS OF EVERY KIND.****GIBSON'S ORIGINAL CHLORODYNE LOZENGES.**

**PENNY SUGAR WORM CAKES**, suitable for either children or adults. Have an immense sale, keep in any climate, and please everybody. Manufactured by

**ROBERT GIBSON, Carlton Works, Hulme, Manchester, and 1 Australian Avenue, London.**

Price Lists sent on application. Our Goods can be bought through any Wholesale or Export House in London. Indents shou'd be mark'd "Gibson's."

ASK FOR  
**RAMORNIE**  
BRAND.  
AUSTRALIAN  
MEAT CO.,  
9 & 11 Fenchurch  
Avenue,  
LONDON.

# LIEBIG'S EXTRACT OF MEAT.

7-lb. tins, 7/- per lb., 49/- per doz.	4-oz. jars, 7/9 per lb., 23/3 per doz.
1-lb. jars, 7/3 " 87/- "	2-oz. jars, 8/3 " 12/4 "
½-lb. jars, 7/6 " 45/- "	1-oz. jars, 9/- " 6/9 "

10 per cent. Discount off 50-lb. Orders.

10 lbs. Carriage Free.

NOTE PRICE!!!

**E. LAZENBY & SON** (6 EDWARDS STREET, PORTMAN SQUARE.) Sole Proprietors of the Celebrated Receipts and Manufacturers of the Pickles, Sauces and Condiments so long and favourably distinguished by their name, beg to remind the public that their labels are affixed to the choicest description of goods only, that every article prepared by them is guaranteed as entirely unadulterated and may be obtained of Grocers, Italian Warehousemen and others.

**HARVEY'S SAUCE.**—CAUTION.—The admirers of this Celebrated Sauce are particularly requested to observe that each bottle bears the well-known label signed "ELIZABETH LAZENBY"; this label is protected by perpetual injunction in Chancery of the 9th July 1838 and without it none can be genuine.

18 TRINITY STREET, LONDON. S.E.

*Elizabeth Lazenby*

## SPECIAL NOTICE & CAUTION.

### BRAND & CO.

The Original Manufacturers of Essence of Beef (green label under wrapper), and other Specialities for Invalids, have

### NOT REMOVED

From their **SOLE ADDRESS**, No. 11  
LITTLE STANHOPE STREET, MAY-  
FAIR, W, and caution the trade to

**BEWARE of IMITATIONS.**

## MAWER'S TARAXACUM COFFEE,



Prepared by an improved process by which the virtues of the Taraxacum or Dandelion Root are retained in a high degree.

In Tins, 6d., 9d., 1s., and 1s. 6d.

Is by far the best in the market. Excellent in quality, neatly packed, cheap and economical, and a very salubrious article. Wherever this superior preparation is introduced, Chemists find a ready and increasing sale.

**AGENTS WANTED THROUGHOUT ENGLAND AND THE COLONIES.**

A LARGE BUYER writes:—"Our customers ask for Mawer's Taraxacum, and will have no other, and we are doing well with it."

A NOBLE EARL, the oldest in the House of Peers, sends the following message:—"Present my compliments to Messrs. Mawer, and tell them I like their Taraxacum, and it agrees with me very well; and request them to send the usual number of tins."

**SOLD BY CHEMISTS EVERYWHERE, AND BY NEARLY ALL FIRST-CLASS HOUSES.**

London Agents: Messrs Sanger & Sons, Barclay & Sons, Edwards & Son.

**BEWARE OF IMITATIONS.**

**MAWER'S TARAXACUM COFFEE.**

Testimonial.—"Lady Charlotte Hobart-Hampden has bought Mr. Mawer's Taraxacum Coffee for over a year and a half, and is able to say that it is much preferred here to the other kinds of Coffee, and that it is found more economical.—Hampden House, Bucks."

**IMPORTANT MEDICAL TESTIMONY.**

"I believe Mawer's Taraxacum Coffee to be a very useful preparation for persons suffering with weakly stomachs or sluggish and inactive livers. It is light, and easily digested, and forms a pleasant and palatable beverage for breakfast or supper."—HENRY R. RUCKLEY, L.R.C.S., L.R.C.P.E., &c. &c.

See Analytical Report by Professor ATTFIELD, F.R.S., &c. Prof. of Practical Chemistry to the Pharmaceutical Society of Great Britain, on every tin.

Terms and Price Lists, Handbills, &c., sent on application to the Manufacturers,

**MAWER, EMERY & CO., LEIGHTON BUZZARD.**



# CONROY'S MALT COFFEE.



The *Globe* says:—"There are, we know, several so-called 'coffees' whose disappearance would be no loss to the British public. These are, for the most part, coffee only in name, a very small portion of the fragrant berry being mixed with ingredients which have no sort of claim to public favour. MALT COFFEE, on the contrary, should be both wholesome and invigorating, if the constituents are what the name implies. Each is beneficial in its own way to the human constitution, and the combination ought, therefore, to improve the health of those who consume it."

The *Morning Post* says:—"The public should consider their own interests, and either insist upon purchasing only coffee which is guaranteed to be absolutely free from chicory, or, if economy is the first thing to be considered, purchase only such mixtures of coffee as retain the especial qualities upon which the value of coffee depends. MALT COFFEE, the new temperance beverage, would seem to make the nearest approach to what is required. Pure malt is in its own way as beneficial as pure coffee, being especially strengthening and nutritious."

Contains about 75 per cent. PURE COFFEE.

Malted by a Patent Process.  
Consists solely of Coffee and Malt.  
Flavour equal to finest Coffee.  
Doctors recommend it.

Contains all the valuable principles of Malt.

More nutritious than Beer or Porter.  
Causes no unpleasant eructations.  
Promotes sound and healthy digestion.  
Breakfast Beverage *par excellence*.

IT IS MADE IN THE SAME WAY AS ORDINARY COFFEE.

Pamphlets containing Testimonials from Eminent Scientific, Medical, and other Gentlemen of the highest position, may be had Free for Gratuitous Distribution.

In cases of 56lbs. each, put up only in 1lb. and ½lb. tins. Each Tin is protected by an Excise Stamp under the Regulations of the new Inland Revenue Bill of August 3, 1882.

PREPARED ONLY AT THE

**MALT COFFEE WORKS, 34 FLEET STREET, LIVERPOOL.**

SOLE PROPRIETORS—

**EVANS, SONS & CO., 56 Hanover Street, LIVERPOOL.**

**EVANS, LESCHER & WEBB, 80 Bartholomew Close, LONDON, E.C.**

QUOTATIONS ON APPLICATION.



## MAW'S SAUCE PIQUANTE,

For Chops, Steaks, Cutlets, Hot or Cold Meat, Fish, Game,  
Soups, Gravies, Salad, Cheese, &c.

PRICE TO THE TRADE, 9s. & 15s. per doz.

10 per cent. and 5 per cent. Cash Monthly.

**S. MAW, SON & THOMPSON, LONDON.**

ESTABLISHED  
1812.

**S. G. CLEMENTS & CO.**

ESTABLISHED  
1812.

DRUG

MERCHANTS.




GRINDERS.

IMPORTERS.

Drug, Chemical, and Seed Grinders. Importers of Flag Annatto. Manufacturers of Liquid Extract of Annatto. Cake Annatto. Roll Annatto. Butter Colouring. Milk and Butter Preservative.

Careful attention to orders for Shipment, which for Canada and the United States is direct from this port. Best Markets sought for Foreign Produce consigned for disposal.

**DRUG AND SPICE MILLS, LEWIN'S MEAD, BRISTOL.**

 **SEVEN INJUNCTIONS** have been granted during the past few months.

 **CAUTION! "YORKSHIRE RELISH."** 

NOTICE IS HEREBY GIVEN that in several actions instituted by Messrs. GOODALL, BACKHOUSE & CO., of LEEDS, Injunctions have been recently granted by Judges of the Chancery Division of the High Court of Judicature, restraining several persons from using several Counterfeits of Messrs. GOODALL, BACKHOUSE & CO.'s Labels, and in particular against the use of the words "YORKSHIRE RELISH." The sole and exclusive right to the use of which words having been finally established by the above Firm, they will take immediate proceedings against parties manufacturing or offering for sale Sauce under the above title, not being of the manufacture of Messrs. GOODALL, BACKHOUSE & Co.

Information may be given to the undersigned,

J. SEYMOUR SALAMAN,

12 KING STREET, CHEAPSIDE, LONDON,

Solicitor to the Trade Mark Protection Society.

SILVER MEDAL, NEW ZEALAND, 1882.

The only one awarded for DANDELION COFFEE.

## PHILLIPS & SONS' DANDELION COFFEE.

Castle Square, SWANSEA; 12 Arthur Street West, LONDON BRIDGE.

Be particular in noting London Address, as we have no connection with a Retail Firm of same name.

Is purely Vegetable,  
Strong, Uniform, and  
Bright.

**McMASTER, HODGSON & Co's**  
IMPROVED  
FLUID EXTRACT OF **Annatto**

For imparting a rich  
and beautiful colour to  
Butter and Cheese.

Is guaranteed to be prepared from the pure colouring ingredient of the Spanish Annatto. Chemical Analysis and recent investigation prove that it possesses the highest degree of colouring power, perfectly clear and a superior and brilliant tint.

## WARREN'S GENUINE "SWEET" ESSENCE OF RENNET

McMASTER, HODGSON & CO., DUBLIN, Copyright Proprietors and Sole Manufacturers.

CAUTION.—None genuine unless the Copyright Proprietors' Name—McMASTER, HODGSON & CO.—is on each label.  
LONDON AGENTS:—Messrs. Barclay & Son, Crosse & Blackwell, Edwards & Son, Hovenden & Son, Lynch & Co.

LIVERPOOL AGENTS:—Messrs. Evans, Sons & Co., and Ayrton & Saunders.

McMASTER, HODGSON & CO. 121 & 122 CAPEL STREET DUBLIN

## THE WELL-KNOWN "LONDON TEAS" ARE ONLY SUPPLIED WHOLESALE BY THE GREAT TOWER ST. TEA CO. (LIMITED).

Siftings from Fine Tea	for Retail at 1/4 per lb.
The London Whole-Leaf Tea	1/8 "
The London Broken Tea	1/8 "
The London Two-Shilling Tea	2/- "
The London Two-Shilling Indian Tea	2/- "
The London Assam Broken Tea	2/8 "

AND OTHER FINER BLENDS.

Order a small Sample Parcel. The Quality never deteriorates.

A. HORATIO JONES, Managing Director.

The Great Tower Street Tea Co. (Limited), 39 Great Tower Street, London, E.C.

## CHEMISTS' TEA AGENCY.

WALKER & DALRYMPLE'S

BROKEN-LEAF TEA, 1s. 8d. per lb.

A MONEY SAVING TEA. ABSOLUTELY PURE.

The small leaf from some of the finest India and China Teas. Produces a Tea in the cup, stronger, richer, and cheaper than most whole-leaf Teas. Agents appointed, where unrepresented, throughout the United Kingdom.

WALKER & DALRYMPLE'S

INTERMEDIATE TEA, 2s. per lb.

BEST at the PRICE EVER SOLD. Great strength and a most useful Tea where there is a large consumption. Recommended to all who wish to SAVE in their Tea. Agents appointed, where unrepresented, throughout the United Kingdom.

WALKER & DALRYMPLE'S TEAS.

AGENTS APPOINTED, where unrepresented, throughout the United Kingdom.

Prospectus and Samples Free on Application.

Warehouses, 154 and 155 WHITECHAPEL ROAD, LONDON.  
P.O.O. payable at head office. Bankers, the National Provincial Bank England.



# HENRY WIGAN & CO.'S ISINGLASS.

IMPORTERS AND MANUFACTURERS OF

**Brewers' and Druggists'**  
**ISINGLASS.**

**HENRY WIGAN & CO.,**  
SWAN LANE, UPPER THAMES ST., LONDON.

## MUSTARD.

**FINCH, RICKMAN & CO.'S**  
Genuine Qualities

Are made from the finest mustard seeds only. Their compounds, as manufactured for upwards of a century, are guaranteed free from all ingredients imparting spurious heat, and are therefore equally suitable for both table and medical purposes.

6 BROKEN WHARF, UPPER THAMES STREET,  
LONDON.

# FINEST ICING AND KALI SUGAR.

SAMPLES ON APPLICATION TO

**W. HOSKIN,**  
SUGAR GRINDER,  
52 NEW ST., HUDDERSFIELD.

## PURE SOLUBLE COCOA.

### VAN HOUTEN'S COCOA

Is the only guaranteed Pure Soluble Cocoa, better and cheaper than any other Cocoa, Cocoa Extract, or any Chocolate.

The *British Medical Journal*, March 27, 1869, says:—"Van Houten's Cocoa is admirable. In flavour it is perfect, and it is so pure, well prepared, and rich in alkaloid," &c., &c. See also the *Lancet*, &c.

Sold (full weight) in 1-lb., ½-lb., and ¼-lb. Tins, at 4s., 2s. 1d., and 1s. 1d. Sample Tins, sufficient for a family, free of charge, through your Grocer or Chemist.

Sole Consignee—H. ESCHWEGER, 6 & 7 Coleman Street, London, E.C.

## INDEX TO ADVERTISEMENTS,

See Pages 21 and 22.

SEVEN PRIZE MEDALS AWARDED.

# GOODALL'S HOUSEHOLD SPECIALITIES. YORKSHIRE RELISH.

THE MOST DELICIOUS SAUCE IN THE WORLD.

This cheap and excellent Sauce makes the plainest viands palatable, and the daintiest dishes more delicious. To Chops and Steaks, Fish, &c., it is incomparable. Sold by Grocers, Oilmen, Chemists, &c., in Bottles, 6d., 1s., and 2s. each.

CAUTION.—On each Yorkshire Relish Label is a Willow Pattern Plate, and name, GOODALL, BACKHOUSE & CO. No other is genuine.

## Goodall's Baking Powder

THE BEST IN THE WORLD.

Makes delicious Puddings without Eggs, Pastry without Butter, and beautiful light Bread without Yeast. In 1d. Packets; 6d., 1s., 2s., and 5s. Tins.

## Goodall's Quinine Wine

The best, cheapest, and most agreeable tonic yet introduced. The best remedy known for Indigestion, Loss of Appetite, General Debility, &c. Restores delicate individuals to health and vigour. In Bottles, 1s. 1½d. and 2s. 3d. each.

## Goodall's Custard Powder

For making delicious Custards without Eggs, in less time and at half the price. Unqualified for the purposes intended; will give the utmost satisfaction if the instructions given are implicitly followed. Sold in Boxes 6d. and 1s. each.

## Goodall's Ginger Beer Powder

Makes Three Gallons of the Best Ginger Beer in the World for 3d.

Is a delicious and invigorating beverage, possessing valuable medicinal properties. It is cooling in its nature, and a most wholesome beverage for both winter and summer. Sold in Packets, 3d. and 6d. each.

## Goodall's Blanc Mange Powder

Is acknowledged by all to be the most convenient and economical preparation ever introduced, as, by its use, a most Rich and Delicious Blanc-mange may be produced in a few minutes at a trifling cost, and may be had of various flavours, i.e., Raspberry, Strawberry, Lemon, Almond, and Vanilla. Sold in Packets, 6d. and 1s. each.

## Goodall's Egg Powder

Acknowledged to be the only real substitute for eggs yet discovered. Its action on Cakes, Puddings, &c., &c., resembles that of the egg in every particular, enriching them in colour and flavour, rendering them most wholesome and nutritious. One penny packet will go as far as four eggs; and one sixpenny tin as far as twenty-eight. In 1d. Packets; 6d. and 1s. Tins.

SOLE MANUFACTURERS—

GOODALL, BACKHOUSE & CO., White Horse Street, Leeds.

A Monthly Price List of Druggists' Sundries, Patent Medicines, &c., can be had post free on application.

# JAMES EPPS & CO.'S HOMŒOPATHIC MEDICINES

ARE SUPPLIED IN BOTTLES

**FULLY LABELLED,**

WITH PRINCIPAL USES, DOSE, AND REPETITION.

For Price List send Trade Card to

48 THREADNEEDLE STREET.

OSCAR SUTTON & CO.,

REGISTERED

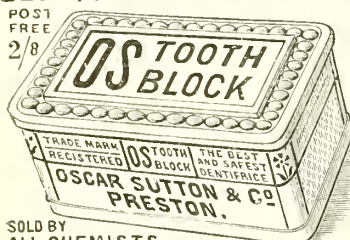
OS TOOTH  
BLOCK

TRADE MARK.

PRESTON.

BEST & SAFEST DENTIFRICE

POST  
FREE  
2/8



SOLD BY  
ALL CHEMISTS.

Prepared from materials recommended by several of the most eminent Dentists of the day, at a Meeting of the Odontological Society, held in London, February, 1875, when the important subject of Dentifrices was discussed. Compressed to a SOLID condition, and put up in elegant and attractive Crystal Toilet Caskets, which retail at 2/6 each; and in Patent Metallic Boxes, which retail at 1/- each; the contents of which can be transferred to the empty Crystal Casket, if desired, so that a perpetual renewal of this most perfect Dentifrice, in its well-known elegant form, can be maintained at a nominal cost.

Sold by the leading Wholesale Houses, at 18/- and 7/- per doz. respectively.

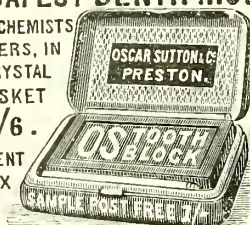
SUTTON'S O.S. TOOTH BLOCKS keep good for any time and in any climate. They may be had of Messrs. Evans & Co.; Barclay & Sons; Illoven & Sons; Lynch & Co.; Maw, Son & Thompson; F. Newbery & Sons; Sanger & Sons; Edwards & Son—LONDON. Felton, Grimwade & Co.—MELBOURNE. John Hercus, DUNEDIN—NEW ZEALAND. James Purves—VALPARAISO. Hy. Pincock & Co.—JAMAICA.

BEST & SAFEST DENTIFRICE

SOLD BY ALL CHEMISTS  
AND PERFUMERS, IN  
ELEGANT CRYSTAL  
TOILET CASKET

PRICE 2/6.

ALSO IN PATENT  
METALLIC BOX  
PRICE 1/-



This celebrated Dentifrice is recognised by leading Dentists as the most efficient for exterminating *Leptothrix buccalis*, and for thorough CLEANSING ABILITIES.

## LYON BROTHERS' IMPROVED MAGNETIC INSULATORS (PATENTED).

Simplest, Cheapest, and Most Effective Preventive and Remedy yet discovered in Cases of

**Rheumatism, Gout, Dropsy, Neuralgia, Sciatica, Lumbago, Paralysis, Cramp, Sleeplessness, and all Nervous Disorders.**

*N.B.—Specially fitted to counteract the relaxing and enervating influences of hot and humid climates on the constitution.*

These IMPROVED MAGNETIC INSULATORS are now used and recommended by eminent members of the Medical Profession, and there is a largely increasing public demand for them.

They possess superior advantages to Galvanic Chain Bands, and Magnetine Appliances, without the inconvenience of wearing them.

May be obtained direct from the Sole Makers and Proprietors,

**LYON BROTHERS, St. Helens, LANCASHIRE,**

OR FROM THE SOLE AGENTS (FOR CHEMISTS),

**S. MAW, SON & THOMPSON, LONDON.**

In Cases containing 12 Sets (4 to the Set), Price 22s. per Case.  
Retail Price, 2s. 9d. per Set of Four.

SHOW CARDS, ETC., ON APPLICATION



# BENTLEY'S NEW OPAL GLASS POTS,

FOR DISPENSING, TOOTH PASTE, COLD CREAM, AND OTHER PURPOSES.

<b>PRICES</b>	{	Lip Salves	$\frac{1}{4}$ oz.	$\frac{1}{2}$ oz.	$\frac{3}{4}$ oz.	1 oz.	$1\frac{1}{2}$ oz.	2 oz.	3 oz.	4 oz.
			$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{6}$	$\frac{1}{8}$	$\frac{1}{10}$	$\frac{2}{1}$	$\frac{2}{8}$	$\frac{3}{4}$ per doz.

**E. BENTLEY, Druggists' Sundryman,**

Manufacturer of Ship and Family Medicine Chests of every description. All kinds of Bottles for Chemists' and Perfumers' use kept in stock or made to order.

9 WINDMILL STREET, and 1 & 2 HILL STREET, FINSBURY, LONDON, E.C.

## THE CHEMISTS AND DRUGGISTS' DIARY, 1883, NOW PREPARING.

Advertisements for this important publication should be sent in at once.

Offices—44a CANNON STREET, LONDON, E.C.

## F. A. SARG'S SON & CO.'S CHEMICALLY PURE GLYCERINES AND TOILET GLYCERINE ARTICLES.

*Transparent Glycerine Soap,*

In registered Packets of three Tablets, and in oval Tablets in paper. Warranted to contain 33% of the purest Glycerine.

*Liquid Glycerine Soap,*

Best preventive against chapped hands, and unrivalled for imparting softness to them, and rendering them clean and white.

See Testimonials of Professor J. von Liebig, Baron; and of Professor F. Wöhler.

*Sarg's Double Distilled Glycerine, Chemically Pure,*

In 1/2 lb. and 1 lb. Bottles, should have a place in every nursery on account of its salutary action on the heads of children, relieving them from dandriff, and the roughness of the scalp they are so commonly subject to.

*Sarg's New Carbolic Glycerine Soap,*

In Boxes of three Tablets, is highly recommended as a most effective disinfection.

### GLYCERINE, CHEMICALLY PURE.

SARG'S DISTILLED CHEMICALLY PURE GLYCERINE, 29° Beaumé, in Cases of Four 56-lb. Tins each.

SARG'S DOUBLE DISTILLED GLYCERINE, Chem. pure, 30° Beaumé, in Cases of Four 56-lb. Tins each; Twenty 5-lb. Bottles, Fifty 1-lb. Bottles, and 100 1/2-lb. Bottles, with Registered Label.

SOLD BY ALL WHOLESALE CHEMISTS AND DRUGGISTS.

SOLE WHOLESALE AGENTS FOR THE UNITED KINGDOM AND THE COLONIES,

**SCHMEDES, ERBSLOH & CO.,**

36 & 37 Monkwell Street, LONDON, E.C.; 14 Market Buildings, Flinders Lane, MELBOURNE;  
34 Pitt Street, SYDNEY.

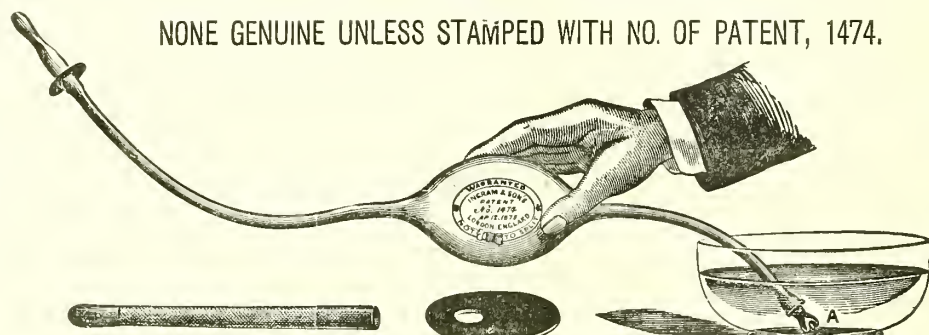
THE ONLY PERFECT ENEMA OBTAINABLE.

# INGRAM'S IMPROVED HIGGINSON ENEMA AND SYRINGE APPARATUS

(BY ROYAL LETTERS PATENT).

Made without Seams or Ribs by our Patent Process of dipping in a solution of India Rubber, thus adding great strength and durability.

CAUTION.—The only  
Enema made without  
Ribs.



NONE GENUINE UNLESS STAMPED WITH NO. OF PATENT, 1474.

All Imitations may be  
detected by the Ribs on the  
Surface, and are always  
liable to split.

WARRANTED NOT TO SPLIT.

A.—Metal Pin Valve.

INGRAM'S IMPROVED PATENT SEAMLESS ENEMA is perfectly smooth on the surface, will not become hard or sticky, will not leak, and will not admit air while injecting or refilling. Specially prepared to resist the heat of tropical countries.

The great superiority of INGRAM'S IMPROVED PATENT SEAMLESS ENEMA over all others has given rise to VARIOUS IMITATIONS, and it has become imperative that the Patentees should, in order to PREVENT DECEPTION, explain the PROCESS OF MANUFACTURE OF THEIR ENEMA and the MODE OF MANUFACTURE OF IMITATIONS thereof, as they have UNDENIABLE PROOF that INFERIOR ENEMAS are positively BEING SOLD as their "ADVERTISED" PATENT SEAMLESS ENEMA.

INGRAM'S IMPROVED PATENT SEAMLESS ENEMA is made by a NEW PATENT PROCESS viz. : By repeated dipping in a solution of India Rubber until the required substance is attained. This process adds greatly to its STRENGTH and DURABILITY, and, at the same time, dispenses WITH ALL SEAMS, which, as is well known are weak points in an Enema. This improved mode of manufacture (the result of long study and experience) enables the Patentees to produce a PERFECT ENEMA WITHOUT SEAMS, thus overcoming the great fault to be found in ALL other Enemas, viz. : SPLITTING AND LEAKING, which has always been a source of trouble.

INGRAM'S IMPROVED PATENT SEAMLESS ENEMA is fitted with IMPROVED VALVES, which prevent the admission of air with the fluid and CAN at any time BE REPAIRED, if necessary.

**CAUTION.**—Imitations of INGRAM'S IMPROVED PATENT SEAMLESS ENEMA are made of several pieces of Sheet India Rubber, which are cemented together and shaped in a mould, thus PRODUCING RIBS ON THE SURFACE, and ENEMAS SO MANUFACTURED ARE ALWAYS LIABLE TO SPLIT AND LEAK AT THE SEAMS, AND THUS TO BECOME QUITE USELESS.

INGRAM'S IMPROVED PATENT SEAMLESS ENEMA may be distinguished from ALL IMITATIONS by its ENTIRE FREEDOM FROM RIBS OF ANY DESCRIPTION on its surface, and by having an IMPROVED METAL PIN VALVE at the suction end A ; and it is acknowledged to be the ONLY PERFECT ENEMA OBTAINABLE.

Patented in England, No. 1474, April 12, 1873; in France, No. 126,909, October 11, 1878; and in America, No. 212,939, March 4, 1879.

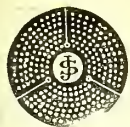
To be obtained of all Surgical Instrument Makers, Druggists' Sundriesmen, Chemists and Druggists, in the three following qualities:—

No. 1a. Highly Polished, in Red, Green, Blue, Black, or White.

No. 1b. Unpolished, in Red, Green, Blue, Black, or White.

No. 2. Unpolished, in Drab only.





Obtained Highest Award—Medals and Diplomas—over  
all European and American Competitors.

(FORM PATENTED.)



SEABURY & JOHNSON'S INDIA RUBBER

# BREAST PLASTERS

Of *BELLADONNA*, *LEAD*, and *PHYTOLACCA DECANDRA*.

POROUS OR PLAIN SPREAD.

PLAIN OR CAMPHORATED.

PREPARED IN INDIA-RUBBER COMBINATION.

Every practitioner will appreciate the form of our article; it conforms perfectly to the Mamma; the uncomfortable stimulating effect of Ointments, Salves, and all external applications that impede the free action of the skin is almost entirely reduced by the plaster being made porous. In addition to these beneficial qualities, its cleanliness in use must not be under-estimated.

## BREAST PLASTERS.

POROUS OR PLAIN SPREAD.

PLAIN OR CAMPHORATED.

ONE DOZEN IN A BOX.

	8 in. in diam.	...	...	...	...	per doz.	s.	d.
Belladonna,	8	in. in diam.	...	...	...	per doz.	6	0
Belladonna,	6	" "	...	...	...	"	4	6
Lead,	8	" "	...	...	...	"	5	0
Lead,	6	" "	...	...	...	"	4	0
Phytolacca Decandra,	8	" "	...	...	...	"	6	0
Phytolacca Decandra,	6	" "	...	...	...	"	5	0
Belladonna and Lead,	8	" "	...	...	...	"	6	0
Belladonna and Lead,	6	" "	...	...	...	"	4	6
Bella. and Phytolacca Dec.,	8	" "	...	...	...	"	6	0
Bella. and Phytolacca Dec.,	6	" "	...	...	...	"	4	6

SEABURY & JOHNSON'S

# MEAD'S ADHESIVE PLASTER

PLIABLE AND ANTISEPTIC.

This article is entirely new, and possesses the following qualities:—

*IT IS PLIABLE, ANTISEPTIC, WATERPROOF, NON-IRRITATING, AND STRONG.*

The warmth of the body makes it adhere firmly.

Cheap Adhesive Plaster is liable to become unserviceable after a short time, even when prepared with the utmost care and skill; at best, it is unwieldly and moderately adhesive. On the other hand, Mead's Adhesive Plaster overcomes every objection, and is sold at a very reasonable price; every ingredient is rendered chemically pure, and spread on strong cotton cloth. The cloth can be torn without danger of removing the plaster mass.

## MEAD'S ADHESIVE PLASTER.

PLIABLE AND ANTISEPTIC.

5 yard Rolls, 14 inches wide,	per 5 yard Rolls	...	...	...	...	...	5	0
1 yard Rolls, 7 "	per dozen Rolls	...	...	...	...	...	14	0

## MEAD'S ADHESIVE PLASTER,

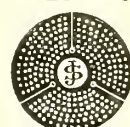
READY CUT ON SPOOLS.

$\frac{1}{2}$ inch Strips, 10 yards long,	per dozen Spools	...	...	...	...	£	s.	d.
1 "	"	...	...	...	...	0	14	0
2 "	"	...	...	...	...	1	4	0
3 "	"	...	...	...	...	1	16	0

SEABURY & JOHNSON'S FULL CATALOGUE ON APPLICATION.

OFFICE AND SALESROOM:—

1 & 2 AUSTRALIAN AVENUE, LONDON, E.C.



# TONGA.—Important Notice.

## REDUCTION IN PRICE.

**ALLEN & HANBURYS** are glad to state that they have been able to make arrangements for an important reduction in the price of TONGA. On and after the 1st November the present 4s. 6d. size will be reduced in price to 2s. 9d., and larger sizes will be put up at 4s. 6d. and 11s. None of the new sizes will be issued until the 1st November. During November all stocks of the old sizes on hand can be returned *through the house from whom they were bought*, and will be credited or exchanged for an equivalent value in the new sizes. The following will be the Wholesale Prices:—

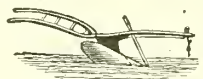
2s. 9d. size, 28s. per dozen. 4s. 6d. size, 46s. per dozen. 11s. size, 114s. per dozen.

*Subject to the usual discounts.*

## A. & H. "TASTELESS" CASTOR OIL

(Oleum Ricini Insuperum, A. & H.)

TRADE



MARK.

A.D. 1715.

PURE, ACTIVE, AND ABSOLUTELY FREE FROM  
ODOUR AND UNPLEASANT TASTE.

THE A. & H. Castor Oil will, we believe, be found free from the only drawback that has hitherto attended the use of, perhaps, the safest, surest, and most generally valuable aperient known. It possesses all the well-known properties of the remedy, but is entirely free from the nauseous smell and taste, a result never before attained. The activity of this oil is in no degree reduced by the new method of manufacture. It is equal in this respect to the best East Indian Oil, and superior to the Italian, hitherto preferred as the least repulsive variety, and often sold as "tasteless."

The *Lancet* of March 4, 1882, writes:—"Messrs. ALLEN & HANBURYS have recently introduced a variety of Castor Oil which seems likely to supersede the old-fashioned form with which we are all so familiar. Their 'Tasteless' Castor Oil is absolutely pure, is almost colourless, and is as free from disagreeable taste or smell as anything of the nature of oil can be. We have given it an extensive trial, and find that it is taken, both by children and adults, without the slightest difficulty, whilst its aperient effects are unquestionable." *It possesses all the advantages that are claimed for it.*

See also THE BRITISH MEDICAL JOURNAL, January 28, 1882; THE MEDICAL TIMES AND GAZETTE, January 7, 1882; THE MEDICAL PRESS AND CIRCULAR, March 15, 1882; and THE CHEMIST AND DRUGGIST, February 15, 1882.

To retail at 6d. each	...	...	...	4s. 6d. per doz.
" 1s. 0d. "	...	...	...	9s. 0d. "
" 1s. 9d. "	...	...	...	15s. 0d. "
" 3s. 0d. "	...	...	...	27s. 0d. "
" 9s. 0d. "	( $\frac{1}{2}$ -gal. Winchs. botts. incl.)	80s. 0d.	"	"

Sold only in Bottles bearing Allen & Hanburys' Signature and Trade Mark.

DOSES—The same as Oil of the ordinary quality.

## SCHIEFFELIN'S

Are made of the best materials; perfectly protected; entirely and quickly soluble; coated while soft; not subjected to the injurious effects of heat in the process of manufacture. The mass is worked to the highest possible degree of uniform intermixture, and subdivided with scrupulous exactness. The coating is an inert, tasteless, and odourless compound, which is so transparent, colourless, and thin, that the distinctive colour of each pill is revealed through the coat. No sub-coating is used. The solubility of the coating is not impaired by age. All the official pills, as well as any others ordered by the Medical Profession, can be furnished in this form. They can be implicitly relied upon in every respect. The coating, while thoroughly protecting the pill, will not be found to in any way interfere with the action of the drug, and those who have found sugar or chalk-coated pills objectionable, owing to the liability of the coating becoming insoluble by age, will find our coating to dissolve as readily after many years as when first prepared. It, moreover, does not form a hard tough shell, as is the case with the ordinary gelatine coating. We claim and believe our Coated Pills to be nearer perfection than any similar goods that have been offered, and guarantee the pills to be as quickly effective as any uncoated pills that can be made.

## SOLUBLE

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